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ABSTRACT OF

A Clinical Lecture

ON

CANCER OF THE PENIS.

Delivered at St. George's Hospital on Nov. 12th, 1899,

BY A. MARMADUKE SHEILD, M.B. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE HOSPITAL AND LECTURER ON PRACTICAL SURGERY.

GENTLEMEN,—You are aware that I lay great stress upon the importance of your perfecting yourselves in the knowledge of common maladies, or of such diseases as are of great importance in daily practice. The distressing complaint which we are about to consider to-day falls into the latter category. It can hardly be called common. Probably it does not amount to more than one or two per cent. of all cancers. Yet instances of the malady may "crop up" at any time in your future practice, and if you mismanage the complaint, if you fail to grasp the full significance of the symptoms in their early stage, you may do a patient grave damage or allow the period to pass when surgical intervention can alone be of avail. Some weeks ago, you may remember, a man came to show himself upon whom I had operated some four years ago. He still, I am glad to say, remains well, and I thought the case so important that I take this opportunity of bringing the subject before you to-day in a practical light.

As local irritation is the great exciter or producer of epithelioma upon muco-cutaneous structures, we find, what might *a priori* be expected, that the majority of the victims of cancer of the penis have been life-long sufferers from phimosis. They have never been able to retract the foreskin, secretion and dirt have accumulated beneath, and thus the affection has originated. I have looked through long lists of cases, but only in a few instances have I found the disease to originate in men who have an uncovered glans penis and a retracted foreskin. The rarity of this complaint in Jews is traditional. This grave consideration is a powerful incentive for urging circumcision upon children with elongated foreskins. It is still more a powerful consideration in the case of adults who begin to get "soreness" or irritation beneath a phimosed prepuce; such cases are commonly enough dubbed "gouty eczema." I believe this to be a misnomer. Timely operation and removal of the source of irritation may doubtless ward off one of the most distressing diseases that a human being can suffer from. There can hardly be a more important matter for the care and consideration of the family practitioner than that, and I implore you to lay it closely to heart.

As you may naturally expect, epithelioma of the penis is an affection of advanced life, yet there are striking exceptions to this rule. I myself have seen two cases in which the patients were under the age of 35 years, and a case is recorded where the victim was only 22 years of age.[1] Indeed, it is curious at how early an age cancer may occasionally be found to attack the rectum or the genitals of either sex. I have known grave diagnostic errors committed from want of knowledge of this fact. I must strongly draw your attention to it. Mistakes are made by supposing that cancerous diseases follow fixed laws, and diagnostic confusion with syphilis is especially likely to occur in young men, as I shall presently point out. I do not know that soot has much influence in causing cancer of the penis. The cancer of chimney-sweeps is essentially an integumentary disease mostly affecting the scrotum. In exceptional, very exceptional, cases cancer may attack a non-phimosed penis; I know of such cases in literature, but I have only seen one. Here the cancer sprouted from the scar of an imperfectly healed chronic syphilitic ulcer. A case is also related where the disease originated in injury, but I have never witnessed such an occurrence. The statement that these cases are due to contact infection—namely, that the wife of the patient is suffering from a cancerous cervix—has little true value. One authority stated in what he terms the "heat of a clinical lecture" that such cases were common, but on requesting him to furnish one example he was unable to do so.[2] I know of only one reputed case and this was probably coincidence. The disease in its early beginnings may be a superficial erosion, a warty growth, or a nodular mass. If the prepuce cannot be retracted some discharge commonly issues from the orifice. This may be hæmorrhagic or sero-purulent. Attacks of redness, pain, and swelling occasionally occur. The discharge is peculiarly fœtid as soon as ulceration begins. At last a hard lump like a haricot bean is felt beneath the prepuce and the disease is established. In other instances perhaps the prepuce can be retracted and the growth will be seen commencing as a small nodule or a vegetating wart which "itches and burns." The latter symptom is of fearful import in such cases. Too often—far too often—this little lesion is treated with caustics, as nitric acid or nitrate of silver, and thus the disease is not arrested, but is stimulated into serious and progressive growth. Infiltration of the tissues takes place at the base of the wart and ultimately a foul ulcer forms, surrounded with hard gristly edges and covered with fungous protuberant granulations exuding a most offensive discharge. Still later the body of the organ becomes infiltrated with disease, as is evidenced by its hard feeling and increased size. The corpora cavernosa are especially affected, the urethra remaining free, comparatively speaking. The condition of the inguinal and lumbar glands is of vast importance in this malady. Sooner or later the lumbar glands become affected and agonising "crampy" neuralgic pains with œdema of the legs supervene. Sometimes a foul and extensive ulcer forms in one or both groins and the patient may be carried off by hæmorrhage from the femoral vessels. I recollect a case in the Hunter Ward which happened when I was a student in which death occurred in this way. More commonly, however, the patient sinks from exhaustion and sepsis produced by the fungating sores and by "secondary" growths in the lumbar and inguinal glands. Indeed, these cases are among the most terrible that we meet with, and did patients only realise the full horrors of neglected malignant disease of these parts they would not be so difficult to persuade of the necessity for early or preventive treatment. Secondary growths in the lungs or other viscera are exceedingly rare though not unknown. The period of life in a case not submitted to operation is variously estimated. I advise you not to prophesy concerning matters beyond your ken. Cancer, above all other maladies, runs very different courses in different individuals and confident prophecies are apt to be rudely falsified. A very difficult but fortunately rare complication of advanced penile cancer is retention of urine. Probably in such cases the disease commences in the urethra. An instance of this occurred in the practice of the late Mr. Henry Smith.[3] Here the surgeon seemed to have relieved the retention by forcing a silver instrument through the growth. In these days, supposing the patient declined the radical operation of amputation, paracentesis of the bladder or opening the urethra behind the growth would be advisable. It is an awkward complication of such cases and you may possibly meet with it in future practice.

Such being a sketch of the cause and terminations of these cases, we next turn to the diagnosis. It is upon this I wish especially to dwell, because it is here that disaster and much blame and after-reproach may fall upon the medical man who acts wrongly or injudiciously. The "pre-cancerous" or early stage is marked by so-called "chronic eczema" or the formation of a warty growth or nodule. When these conditions, however slight, are associated with phimosis and advancing life the case at once assumes a most anxious aspect. The right course here is at once to advise circumcision and apply local antiseptic and soothing remedies. Of these carbolic acid, boric acid, and mercurial preparations take the first place, but they must all be applied very dilute. The case must be carefully watched and once the diagnosis is made very free removal must be carried out. We will speak of this presently. I would only again caution you against complicating the diagnosis by the application of inefficient caustics. I do this from my own experience of what I have seen from thus treating early cancerous conditions in the tongue, lips, and elsewhere. I am aware that

[1] Transactions of the Pathological Society of London, vol. xl

[2] Medical Times and Gazette, Jan. 12th, 1884.

[3] THE LANCET, Jan. 31st, 1863.

more than one authority advises a contrary course. With the greatest diffidence I must directly differ from them, and I have no hesitation in speaking strongly against the practice.

There are two very peculiar conditions associated with early cancer of the penis. The one is the formation of horns, the other the occurrence of malignant dermatitis (Paget's disease) of the integument of the glans. An epitheliomatous horn is always indurated at its base; it consists of massed epithelial material, frequently being "piled up" upon the summit of a wart. I show you here the remarkable specimen kindly sent to me by Dr. Walker of Peterborough who operated. The parts have somewhat shrivelled and the appearances do not give you much idea of what one saw clinically, for in this very striking case "Paget's disease" was evident behind and around the horny growths.

A case of this remarkable condition was shown by Mr. Pearce Gould at a meeting of the Pathological Society of London in February, 1887. The patient, aged 52 years, had as usual congenital phimosis, for which he was circumcised. The wound never soundly healed and a small wart developed. Upon this a horn grew, and it is stated that the patient regularly pared it down. After removal epitheliomatous structures were found at the base. Five cases of penile horns are stated in the same paper to have been collected by Erasmus Wilson, six by Lebert, and other authors. Horns may also be in exceptional cases non-epitheliomatous, as in a case related Dr. Van Orloff.[4] Here the patient was a boy, aged only 14 years, and the horn grew from a wart behind the prepuce. So, as a rarity, a horn may originate in an ulcerating sebaceous cyst. A specimen measuring one and three-eighths of an inch in circumference was removed by Brunton of Philadelphia.[5]

The practical lesson you learn from all this is obvious. A horny growth on the penis usually has an epitheliomatous base, and if this be the case free extirpation cannot be too early carried out. The condition is a rare one, ulceration and warty papillomatous structures being far more commonly met with. Should the horn originate from a sebaceous cyst induration at the base will be absent.

The so-called malignant dermatitis is quite unmistakeable in appearance. Usually occurring about the nipple in the female, it may exceptionally be found in other parts, and I myself have described a case occurring in an elderly man above the pubes. The patch of disease is of a vivid red, raw, glazed appearance, there is a viscid alkaline discharge, and whitish islets of epithelium are scattered about upon it. To these the name of "psoriasis" is often wrongly given. If you can lightly "pinch up" a portion of the affected patch between the finger and thumb a definite slight thickening may be felt. Now, this condition is certainly cancerous, and I know of no local remedies which will definitely arrest or cure it. Early free extirpation is the sole safe resource. It is in this condition especially that the remarkable "cell forms" termed psorosperms are so common, and the latest theories regarding the true nature of these and their relation to cancer may well be worthy of your attention.[6]

Tarnovsky of St. Petersburg describes a case of psoro-spermosis (Paget's disease) of the glans penis in a syphilitic patient. The patch resembled eczema and was accompanied by ulceration, itching, and pain. It is important to note that treatment for four months failed to make any impression upon the disease. Another case is related by Pospeloff of Moscow.[7] In Crocker's case the skin of the penis and scrotum were both affected by the disease.[8]

I have an idea that "Paget's disease" of the glans penis or prepuce is really more common than is generally described, and looking back on cases I have seen discussed as "intractable" or "gouty" eczema under the foreskin of elderly men I cannot help thinking that they were really of this nature. The vivid raw, red, glazed appearance is very striking and at once engages attention, if the observer be familiar with it from observation of previous cases. The whitish patches of epithelium may be very abundant and largely conceal the vivid red surface beneath. In some instances, as pointed out, cancer begins as a nodule on the glans penis, which breaks down and leaves an excavated ulcer. Indeed, I may say with truth that cancer of the penis assumes two distinct forms—the warty or papillary and the excavated ulcerating variety.

This brings me to speak of a very important subject in connexion with these cases—the condition of the inguinal and lumbar glands. The inguinal glands receive the lymph from the superficial area (skin and mucous membrane of the urethra) of the penis, while the lymph from the deeper parts of the organ passes to the lumbar glands along the dorsal vein of the penis. Consequently it is the inguinal glands which are most early affected in this disorder, the lumbar glands only becoming implicated in neglected cases, when the growth has extended along the corpora cavernosa. Now the greatest peculiarities are observed in the way the glands become affected. In some quite advanced cases the glands escape. In others they are early affected. The more chronic, warty, or horny the cancer the less likely are the glands to suffer. The more ulcerating, unequally extending, and exuberant the growth, the more early and hopeless will be glandular contamination. Thus enlarged glands in the groin must be taken with reserve in diagnosis. Moreover in an ulcerating cancer the glands may inflame and even suppurate, for not only "cancer"-cells but pyogenic organisms gain access to them. This is of great importance in the treatment. When the inguinal or lumbar glands are extremely infected anything like great prolongation of life is hardly to be looked for as a result of operation. It is, however, often justifiable to amputate in such cases, only to relieve the patient of the terrible local suffering caused by a mass of ulcerating cancer.

In the more advanced cases diagnosis is seldom difficult. The fœtor, the infiltration of growth, the warty granulations are all as typical of cancer as is the case elsewhere. Gummatous ulceration of the penis may simulate cancer, but here the base of the sore is devoid of gristle-like hardness, the margins are serpiginous, and other signs of syphilis will usually be present, as scars on the tongue and legs. Moreover, large doses of iodides soon effect obvious improvement. Should cancer engraft itself upon an old syphilitic sore the sprouting warty mass will soon make the true nature evident. This will be well seen in a case narrated at the end of this lecture. It is otherwise in the diagnosis between primary chancre and cancer. Here problems arise which must be investigated with the extremes of caution or very deplorable errors may arise. I do not like to mention names in connexion with these cases for fear of identification. I may tell you, however, that cases have occurred where amputation has been performed on the diagnosis of cancer when a roseolous rash and subsequent examination showed that the true malady was primary syphilis. I need only mention this terrible error to you to show you the difficulty that surrounds some of these cases and how warily you have to walk regarding them. Great diagnostic difficulties arise in regard to "relapsing" chancres. Some of you may know, or will hereafter learn, that chancres may develop *de novo* upon the site of former chancres, perhaps as long as 12 months after the original disease. I have had a case in my own practice where this occurred twice at intervals of 12 months, and the diagnosis of cancer might readily have been made. I will give you the following rules in dealing with such difficulties. Firstly, remember that it is within the boundaries of possibility that a man of any age, of any calling, may have a "hard" chancre beneath a phimosed prepuce. Secondly, cancer may occur in comparatively young men.

The ulcer should be inspected, if needful circumcision can first be performed. Should there be any doubt of its nature, and this is likely enough, full consultation should be sought. If still difficulties arise, mercury and iodides should be administered in full doses, and we must wait. It has happened to me more than once to be placed in these perplexities, and it is better to wait for a confirmatory "rash" than to operate recklessly. I may remark that the development of the sore is far more rapid in syphilis than in cancer, and the glands in the groin become more rapidly enlarged in chancre than in cancer. The microscopical test of excising a portion of the edge of the sore under cocaine must never be omitted. Unless the appearances are quite definite of epithelioma you had better distrust the evidence. It is my practice in such cases to send portions to two separate pathologists of acknowledged repute, and to consider their evidence in conjunction with clinical manifestations.

Next, I must draw your attention to the possible diagnostic difficulties which may arise between cancer and gummata of

[4] Brit. Med. Jour., August 13th, 1887.
[5] Medical Press and Circular, August 17th, 1887.
[6] Practitioner, April, 1899.
[7] British Journal of Dermatology, 1891.
[8] Transactions of the Pathological Society of London, Nov. 6th 1888.

the body of the organ, or that rare condition known as "gouty tumour" of the penis. Here you may especially note that cancer of the penis is in its commencement essentially a superficial disease. It begins on the surface and extends downwards. A hard nodule commencing in the corpora can hardly be carcinoma. Cancer commencing in the urethra is very rare, and usually associated with old sinuses or other causes of chronic irritation. Gummata of the body of the penis may be hard and are very threatening in aspect, so that the hasty diagnosis of cancer is readily made. The gouty tumour is of the same nature as Dupuytren's contraction of the palmar fascia. Indeed, I have once seen these two conditions associated in the same person. It is a localised fibrosis leading to thickening, and perhaps deformity, of the organ. The patient is usually elderly, and the signs of gout are marked. In these cases also the diagnosis of carcinoma has been arrived at. An allusion is made to the gouty infiltration of the penis in the *British Medical Journal* of May 8th, 1886. In the case referred to a distinguished Scotch surgeon wished to amputate the organ for supposed cancer. A typical case is related by Cameron of Glasgow.[9] Here the patient was a gentleman past middle life, and he had a tumour in the penis, oval and about the size of a horsebean. During erection the organ became distorted. The question here arose as to its being of a "malignant or scirrhous" nature. It is worthy of remark that the patient in this case had a little "knotty" thickening in the palmar fascia leading to contraction of the little finger. The concidence was very striking.

No doubt some such tumours are due to gout, others to gummatous deposit, and under large doses of iodide of potash very threatening-looking swellings may disappear which have developed slowly in the corpora cavernosa.

Sarcoma of the penis is very rare and probably you will never meet with an instance of it. I only mention it here for the sake of completeness. A case is related by Mr. Battle[10] well worthy of note. The patient was a retired clergyman, aged 60 years. He noticed a gradual enlargement of the end of the penis with a blood-stained discharge from under the prepuce. Hæmorrhage seems to have been a marked symptom. There is a specimen of melanotic disease in our museum removed by Mr. Holmes in 1872, and Mr. Golding-Bird is stated to have had another case at Guy's Hospital of spindle-celled sarcoma. The diagnosis of these cases prior to removal is uncertain, except in the case of melanosis, but the clinical characters of malignant disease are usually well marked.

Having thus spoken of the important diagnostic difficulties which may beset this subject the appropriate treatment must now engage our attention. Firstly, what course are we to pursue in the very early or dubious cases? Take the case of an elderly man with whitish thickening of the epithelium over the glans and the formation of an itching wart or horn with questionable induration at its base. I am sure in such cases that amputation of the end of the organ is the safer practice and that which would be followed by the best ultimate results. Few patients will submit to such radical treatment for an affection they consider but slight. If any other local treatment be adopted of a destructive nature it must be efficient. The action of such agents as nitric acid is very difficult to control and I strongly oppose them. Either free excision of the diseased part must be practised or it must be eradicated with the actual cautery. The resulting healing leaves a deformed organ and the scar is only too likely soon to show signs of fresh mischief, so the operation of amputation becomes absolutely needful and had better have been performed at first.

The instance of horny growth on the penis referred to affords a good example of the difficulties associated with treatment of early cancer. This very interesting and important case was sent to me by Dr. Walker of Peterborough for an opinion in 1897. It is principally of interest here as showing the treatment I advise in such conditions. The question was, should the horn and its diseased base be cut out or should amputation be performed? Seeing that "malignant dermatitis" was present over the glans, with vivid red patches and masses of thickened and fissured white epithelium, I felt sure that any partial operation would leave disease behind and I most strongly urged amputation of the anterior end of the organ. The greatest opposition was expressed to this course, but I remained inflexible and it was ultimately carried out. I heard lately that this patient died from bronchitis about a year or 14 months after the operation. He had good micturition power, and there was no sign of return. I may add that there was no reason to suspect implication of the inguinal glands.

In early cases, when the body of the penis is free, amputation must be performed about the centre of the organ. When, however, the surgeon is confronted with those common cases where the disease has been concealed and serious infiltration of the corpora cavernosa has occurred I am sure that removal of the whole organ after the method described by Gould is the best treatment. In such cases the question of removal of the testes also will arise. Here there is always room for difference of opinion. My own practice would be to leave the organs on account of the mental depression that must arise in adding such an operation to one already sufficiently distressing. The idea of division of the cord, to cause testicular atrophy, has been present in my mind, but hitherto I have not adopted it. Should the scrotum and testes be unhappily implicated the removal of such a loathsome condition may be justifiable. In bad cases, where the whole genital apparatus is involved, the penis and scrotum with the testes have been successfully removed, as in a case under the care of Mr. Vincent Jackson of Wolverhampton.[11] Here the surgeon met with rather free hæmorrhage in detaching the crura. This has also been my own experience.

I am not going to waste your time by describing the various operations for removal of the penis. If any one of you undertakes this proceeding he will probably carefully study the various methods and select the most appropriate. The remarks I shall make will be therefore rather general. Firstly, I may mention the use of the hot galvano-ecraseur wire only to condemn it. Secondly, the great difficulty of these operations lies in the management of the urethra. Gould's operation described in THE LANCET of May 20th, 1882 (p. 821), is infinitely to be preferred when the amputation has to be done close to the scrotum. Nothing is more miserable than the condition of a man whose urethra opens flush with the pubes. At every effort of micturition urine runs over the scrotum and thighs, which become eczematous and red, and no apparatus can be constructed to carry away the urine from the person. It is otherwise when the urethra projects from the perineum. In seclusion the patient micturites like the opposite sex and when out of doors he uses a receptacle. An excellent apparatus is one made out of glass and Mr. Hawksley has lately fitted a patient of mine with

Apparatus for a perineal urethral opening.

this contrivance with striking benefit. The patient applies the urinal when he wishes to micturite and the stream is carried away clear of the clothes by the tube. It should be a leading principle always to make a perineal opening in cases where the organ has to be removed far back.

When amputation is performed about the centre or behind the glans, great care must be taken in the operation. I have found the formation of lateral skin and fascia flaps very advantageous. The urethra is cut a little longer than the corpora, and slit up along its under surface for a full half inch. The cut margins are accurately united to the edges of the skin flaps, the incision being prolonged backwards for the purpose. Indeed, the urethral opening can hardly be much too free. I pass a No. 12 gum catheter into the bladder and keep it there during the first week, secured by a silk stitch to the mouth of the operation wound.

The question of infection of the inguinal glands is an anxious one. Any implication of these structures renders the prognosis unfavourable. Still, amputation may be performed even in the presence of hopeless glandular contamination, in the hopes of giving the patient temporary relief by removing a local mass of disease, a source of great discomfort and misery.

The question of operating or not upon enlarged glands in the groin must vary with each individual case. Instances

[9] THE LANCET, May 10th, 1884, p. 841.
[10] Transactions of the Pathological Society, 1885.
[11] THE LANCET, August 20th, 1887.

may come before the surgeon where all proceedings are hopeless. Many cases may present themselves which are doubtful. I would, however, draw your attention to one condition in which operation is peculiarly unfavourable, namely, when a twofold infection has occurred, and the glands are suppurating as well as implicated in cancerous growth. As a rule, in such cases operation wounds never heal, and a cancerous ulcer in the groin with all its attendant miseries may result from the best executed operation. Supposing you have made up your mind to extirpate the glands you may recollect that the majority lie above the fascia lata, and can be safely taken away from the femoral sheath. I strongly advocate raising a large triangular flap of skin and fascia, so as to expose the whole of Scarpa's triangle, and not to attempt to operate through small or insufficient incisions. The glands must then be cautiously removed. Should the femoral vessels pass through the mass I advise nothing more to be done if it be impossible to remove the glands from the vessels. I have seen the femoral artery and vein taken out in such cases and I have twice seen high amputation at the hip performed under similar circumstances. The result of these cases made me make a careful note never to imitate such proceedings in my own practice. If the lumbar glands are infected the case is very hopeless. It would be quite justifiable in such cases to remove the masses through a trans-peritoneal opening, but the practice would be risky and, I fear, would hardly prevent speedy recurrence by the side of the spine higher up. One course of practice is quite clear. If early glandular enlargement exists at the time of operation a very free removal should coincidently be effected.

The last part of this interesting and important subject is the question of prognosis. Here the usual caution must be inculcated. As a broad rule cases of chronic growth started by local irritation show remarkably good results and I have an impression that the warty papillomatous epithelioma is less malignant than the infiltrating ulcerative type. Another rule which stands good is the fact that if glandular contamination is at all extensive temporary local relief alone can be hoped for. To try to form an estimate of the results of these operations I looked up a number of cases in our hospital notes, but I failed to find the patients at the addresses given and I could not accurately estimate the final results. This is an unfortunate circumstance and the final results of our cases are in hospital practice too often lost in obscurity, yet nothing is of more importance from an educational point of view, as teaching the true value of operative procedures. Accordingly I am not in a position to offer you information regarding the prognosis founded on a large series of cases. Like other instances of epithelioma produced by local irritation extreme chronicity is observed in some instances, and if removal is effected prior to glandular contamination very beneficial and lasting results may be anticipated. I have performed this operation, or assisted in its performance, six times and I have knowledge of what has happened to the cases afterwards. These cases I now shortly relate. I may remark that the diagnosis in each of them was established without doubt and that microscopical examinations were made.

In the first case I have experienced the operation was performed by the late Sir George Humphry and I acted as assistant. As I have intimate knowledge of the progress of the patient afterwards I may shortly relate it. A gentleman, aged about 60 years, had persistent eczema of a gouty nature beneath a phimosed prepuce. He declined circumcision and an ulcer formed which, unfortunately, was treated with caustics—I believe nitric acid. An ugly epitheliomatous sore of the size of a shilling implicating the glans penis was the result. The glands in the groin were apparently not enlarged. The penis was amputated about its centre, the urethra was left long, slit up beneath, and attached to the skin. This gentleman remained well for no less a period than over 10 years. He was hale and hearty and died from affections quite unconnected with the original malady.

The second case was that of a gentleman, aged 57 years. I saw him in July, 1889. He had life-long phimosis and a hard, painful, indurated lump had slowly formed beneath the prepuce. The glands in the groin were apparently not implicated. In this case I was in grave doubts about the nature of the sore. The patient was married with one child but confessed to occasional irregular intercourse. I obtained permission to slit up the prepuce under anæsthetics. When this was done a foul ulcer was disclosed with hard gristly edges. This was dressed with carbolised dressings and iodoform and watched. Portions of the edge of the sore were examined microscopically, but one observer contradicted the dictum of the other. Iodides were administered in full doses, for an eminent consultant, relying rather on the history of the patient, pronounced strongly in favour of syphilis. As time wore on the true nature of the malady only became more apparent and amputation was performed in 1889. The organ was removed flush with the pubes and the urethra was dissected up and brought out in the perineum in front of the anus. This patient died two years ago from "bronchitis." He remained well with comfortable micturition for no less a period than eight years. Micturition through the perineal urethra was always well performed without discomfort.

The third case is still more remarkable. A retired army officer, aged between 50 and 60 years, had long suffered from old syphilis of the penis. The glans was ulcerated, the prepuce was thickened, fissured, and scarred, with whitish patches of thickened epithelium upon it. Indeed the appearance much resembled what one is familiar with in old syphilis of the tongue. This gentleman saw many surgeons and all sorts of remedies, local and general, were applied. At length, from the site of the imperfectly healed ulcer, a mass of epitheliomatous growth sprouted. I removed the organ about the centre, by the lateral flap method, leaving the urethra long, well slitting it up, and stitching it to the skin on either side. The inguinal glands being but slightly enlarged were not interfered with. The operation was done in 1892 and the patient is well, with good micturiting power at the present time, a period of seven years.

The fourth case was that of a man, aged 45 years, who was operated upon in St. George's Hospital nearly four years ago. In his case the disease had commenced beneath a phimosed prepuce nearly 10 years prior to admission and had extended to a great degree, infiltrating the body of the organ. The inguinal glands remained free. In this case the whole organ was removed by splitting the scrotum and detaching the crura. Great trouble was encountered with profuse venous bleeding from a large vein which passed through the sub-pubic ligament and was cut nearly flush with it (dorsal veins of penis). This was ultimately secured by a pressure forceps which was left attached. The urethra was brought out in front of the anus, left about three inches long, and covered by two little flaps of skin dissected up from the perineum. This patient healed well, but his mental condition was serious and on the third day he became insane. I at once got him out of bed and gave him a liberal allowance of wine and good food. In about a week his delusions passed away and he ultimately recovered completely. The other day he came to see us. Nearly four years have elapsed and there is no sign of return of the disease. His micturition power is excellent. The perineal urethra is shrunken and retracted, so that a prominent elevation about an inch in height projects from the surface. He is able to micturite with comfort and even to expel a definite jet of urine away from the body.

The fifth case was in the person of a strong, healthy man, only 40 years of age. A mass of papillary epithelioma had formed beneath a phimosed prepuce. The history was quite uncertain. Amputation was performed and he was quite well three years after. He has gone abroad and I do not know what has become of him.

The last and sixth instance was in the person of a gentleman, aged about 50 years. He had noticed trouble beneath a phimosed prepuce for about two years. The whole penis was converted into a formidable cancerous mass, a sprouting lump of papillary growth projecting from the prepuce. The inguinal and lumbar glands were free. In this case the "complete" operation was performed. He recovered well, with good micturition power. The operation was done too recently to estimate its ultimate result.

In conclusion I would point out that a recollection of these cases will enable you justly to offer great encouragement where it is so much needed. I have an impression that, as in the case of cancer of the breast, an investigation into the results of operations for epithelioma of the penis would show many cases as strikingly favourable in their ultimate results as those I have related. It is for you in your future practice to remember that early operation is the secret of success, and ever to avoid undue procrastination,

or the treatment of conditions on the verge of being cancerous with irritating and inefficient remedies. You will thus avoid reproaches too often justly deserved, and will obtain the confidence and ultimately the gratitude of your patients.

MALARIA AND MOSQUITOES.[1]

BY DR. G. BASTIANELLI
AND
DR. A. BIGNAMI.

(*Translated for* THE LANCET *by* Dr. G. SANDISON BROCK.)

THE suspicion that some relation exists between malaria and mosquitoes is to be found more or less clearly expressed by even the less recent authors, amongst others by the celebrated Roman physician Lancisi. But the question cannot be said to have entered upon its scientific phase until within the last few years, when, with a knowledge of the malarial parasites of man, various investigators directed their efforts to the investigation of the biology of these parasites in their extra-corporeal existence and to the means by which they effect an entrance into the human organism. The constantly negative results of all attempts to discover the parasites in the soil or in the water of malarious places led some observers to the conclusion that their studies should be pursued in another direction. Taking advantage of certain facts observed in the analogous affections filaria disease and Texas cattle fever, two hypotheses were constructed which served as guides in this fresh investigation. As to the first, it was known that in filaria disease the parasite is sucked in with the blood by a particular species of mosquito, within which it completes its life-cycle, and after the death of which it is set free in water. On this fact was constructed one of the many hypotheses suggested by Laveran which was afterwards sustained with much warmth by Manson. In regard to the second — the Texas fever — it had been shown that the disease was caused by a tick which inoculated a parasite of the red corpuscles, closely analogous to that of human malaria, into the blood of cattle. This served as the basis of the other hypothesis.[2] Two indications towards a solution were thus furnished. On the one hand the attempt was made by causing mosquitoes of various species to bite malarious persons, to follow out in them the further development of the malarial parasite as had been done in the case of filaria, and on the other hand mosquitoes collected in malarious localities were made to bite healthy persons in order to see whether the latter would take the fever. The former method led up to the first brilliant results of Ross who, studying the proteosoma of sparrows, succeeded in following out its whole life-cycle in a particular species of mosquito (the grey mosquito). These researches of Ross, it is apparent to everyone, possess an extraordinary importance, since they not only indicate for the first time the forms in which a hæmosporidium develops in the body of a certain species of mosquito, but demonstrate the fact that for a given hæmosporidium such development is only possible in a given species of mosquito, and in no other species, and therefore indicate the necessity of looking for a separate and appropriate species of mosquito to serve for the development of each different species of hæmosporidium. In this way they constitute an invaluable guide to subsequent researches on human malaria. We deem it well to emphasise these points so that no one can suspect our perception of the truth to have been obscured by certain recent polemics. The second method, after a series of attempts which little by little led to a simplification of the problem, has resulted in an irrefutable experimental demonstration that human malaria is a disease inoculated by particular species of mosquitoes.

The two hypotheses referred to as having served as guides in the investigation (namely, that of Laveran-Manson, based on analogy with the filaria nocturna, and the hypothesis of inoculation) appear at first contradictory, since the former led to the conclusion that man is affected through the medium of the water of malarious places (as sustained by Laveran, Manson, and, in the beginning of his studies, likewise by Ross), or even by means of the air; the latter, on the contrary, excludes any such possibility, holding that malaria is a disease exclusively of inoculation. This last view was supported, not only by arguments founded on analogy, but also by a series of epidemiological and clinical facts all tending to exclude the possibility of infection by the other channels so commonly—indeed, one may say universally—believed in. In fact, in the case both of human malaria and of the proteosoma of birds, mosquitoes not only take the parasite from its warm-blooded host but inoculate it afresh into a new one.

For determining the variety or varieties of mosquito adapted to the development of the hæmosporidia of human malaria the assistance of a zoologist was necessary in order that it might be ascertained which were the species predominating in places where malaria prevailed. To this study attention was devoted by Grassi, who pronounced as "suspected" all the species which are found in malarious localities and are not found in healthy ones, and more especially three of these—viz., anopheles claviger, culex penicillaris, and the so-called culex malariæ. With these species, captured in the adult state in a highly malarious locality at the end of the malarial season of 1898, the first case in man of experimental malarial infection was obtained. This result, the importance of which has almost been overshadowed by the mass of evidence brought forward later, produced a deep impression on our minds since it gave us the certainty of being on the right track.[3] The mode in which this experiment was conducted did not, however, admit of an exact determination of the species of mosquito responsible for the inoculation. Only by subsequent researches was it demonstrated that the extra-corporeal hosts of the human malarial parasite are the various species of the genus anopheles. The complete demonstration of this truth is the fruit of the work carried out in collaboration during the past year by Grassi and ourselves.

Of these researches we may give here a brief *résumé* to indicate the present state of the question, and we propose in doing so to occupy ourselves first of all with the æstivo-autumnal parasites. These present two life cycles, one of which is completed entirely in man and is the cause of the fever, while the other is only initiated in man and is completed in mosquitoes of the genus anopheles. This second cycle is represented by the semilunar bodies, the significance of which has hitherto been a subject of controversy. These forms, as we have demonstrated, originate principally, if not exclusively, in the medulla of the bones, where the young forms are found accumulated; they then pass into the peripheral circulation, where as a rule they are discoverable after the fever has lasted some days; and finally, without giving rise to fever or other symptom of illness, they degenerate and disappear without multiplying and without having any relation to subsequent relapses of the fever. For these reasons we considered them as sterile forms,[4] and sterile they certainly are with respect to *man*. But if blood containing mature semilunar bodies be sucked by mosquitoes of the genus anopheles, the crescents complete in the body of the mosquito a new life-cycle which may be briefly sketched as follows. Some of the crescents are converted into the well-known flagellate bodies; others become round bodies and do not flagellate. From the former the flagella (which, as we have demonstrated,[5] in the forms found in human malaria consist of a filament of chromatin surrounded by a very fine envelope of protoplasm) detach themselves; one of these so-called flagella penetrates one of the round bodies and impregnates it; this impregnated form, after a series of changes to which we shall return later, finds its way into the wall of the middle intestine of the anopheles and is there developed. The semilunar bodies have therefore the significance of sexual forms; adopting the terminology of the zoologist we shall call the crescents "gametes," the pseudo-flagellates or male elements "microgametocites," the single flagella microgametes, and the forms which become impregnated, or female elements, "macrogametes." The macrogametes differ from the microgametocites (in preparations stained by

[1] A paper read before the Tenth Congress of the Società Italiana di Medicina Interna.

[2] A. Bignami: Hypothesis as to the Life-history of the Malarial Parasite outside the Human Body (THE LANCET, Nov. 14th and 21st, 1896, pp. 1363 and 1441).

[3] A. Bignami: The Inoculation Theory of Malarial Infection (THE LANCET, Dec. 3rd and 10th, 1898, pp. 1461 and 1541).

[4] A. Bignami and G. Bastianelli: Osservazioni sulli Febri Malariche Estivo-autunnali (Rif. Med., 1890); Studi sulla Infezione Malarica (Reale Accademia Medica di Roma, 1894).

[5] G. Bastianelli and A. Bignami: Sulla Struttura delle Forme Semilunari e dei Flagellati (Annali di Medicina Navale, 1898).

Romanowsky's method) in having a smaller quantity of nuclear chromatin and the protoplasm more deeply coloured by the blue.

As to the facts of analogy and the observations on which the above conclusions are based, having already cited them in recent writings on this subject, we shall omit them here for the sake of brevity. We refer more especially to the observations of Simond, Schaudin, Siedlecki, MacCullum, and Koch. The impregnated forms—or zigotes—traverse the epithelium of the middle intestine of the anopheles and lodge amongst the muscular fibres. They may, however, develop amongst the cells of the epithelium itself. In either situation they become surrounded by a delicate membrane, and gradually augment in volume till they assume the aspect of a typical sporozoon; the nuclear chromatin divides and sub-divides into a great number of little bodies around which a fine zone of protoplasm is disposed. Segmentation completed, each of these little bodies elongates, assuming a typical filiform appearance; great numbers of such filaments are then seen within the capsule all equally furnished with a distinct nucleus and disposed in various ways around masses of granular substance of greater or less size, in which it is not possible to recognise any structure. These are sporozoites and residua of segmentation. At this point of development, which may be observed in parasites which have reached a very variable size—for instance, in the largest sporozoa of 80μ diameter, or even more, as well as in parasites less than half that size—the evolution of these organisms in the middle intestine is completed. The capsules rupture and the sporozoites are disseminated through the body of the mosquito, and finally accumulate within the cells in the tubules of the salivary glands of the insect. When this has occurred the anopheles becomes capable of infecting a healthy individual with æstivo-antumnal malaria by its bite, a fact which has been clearly demonstrated experimentally. This marvellous life-cycle, which is in perfect accordance with that described by Ross in the case of the proteosoma of birds in the grey mosquito, is not completed in a nearly uniform time as occurs with the forms of the same parasite in the homeothermal host (man), but in a very variable period, lasting at a temperature of about 30° C. from 10 to 12 days, and at a temperature of from 18° C. to 20° C., more than double that time.

These facts being established (we omit details for the sake of brevity) we turned our attention to a study of the same cycle in tertian and quartan parasites, which cycle the preliminary observations made with Grassi had shown us is completed in the same mosquitoes of the genus anopheles. Both the parasites of tertian and of quartan fever have two life-cycles, one completed in man, the other only initiated in man and completed in the anopheles, which might therefore be called respectively the human or fever-producing cycle and the anophelian cycle.

As regards the development of the tertian gametes in the anopheles we shall merely state that it is completed in the same manner as is that of the crescent bodies, but that it differs in some evident morphological characters principally in the first stages of growth, so that only in these is it possible to make a differential diagnosis with certainty between the forms of tertian origin and those of semilunar origin. The duration of the development likewise depends chiefly on the temperature, occupying a period more or less within the same limits as in the case of the semilunar parasites. On this point we have little to add to what we published recently. We may mention, however, that we have noticed also in the tertian parasites the formation of the so-called "black bodies" which are mostly found in anopheles that have been infected for rather a long time (more than 10 days) and generally inside ruptured capsules, although capsules apparently whole are also to be found full of "black bodies" of different forms and sizes, elongated or rounded, and representing probably a product of degeneration of the contents of the sporozoon.

The sporozoites are disposed in the salivary glands similarly to those of semilunar origin. The salivary glands are two in number, each composed of three tubules which join together by means of their small ducts to form a common excretory duct. Of these three tubules the central one differs notably from the lateral ones in being shorter and containing epithelial cells of a hyaline aspect; while the others present cells filled with granular or even filamentous contents, especially at the bottom. At first sight this filamentous substance might be confounded with sporozoites. It is, of course, easy to recognise the sporozoites in coloured preparations in which the little nucleus is clearly displayed, but even in the fresh specimen it is impossible for a practised eye to commit the error when once familiar with the uniform size and typical shape of the sporozoites. In this connexion we should mention that in some cases typical sporozoites are seen in the salivary glands incurved so as to form a ring, strongly recalling the well-known annular forms found in human blood. Drawings of some of these ring-like bodies are given in our recent work, and we consider as quite unwarranted the doubt lately expressed as to their identity with sporozoites by Grassi, who gives no reason for such a doubt.

Whilst the development of the semilunar and tertian gametes in the anopheles may easily be followed the study of those of quartan fever presents considerable difficulties. Although we made many attempts, only in two patients did we obtain positive results, or rather only from these two cases did we succeed in infecting mosquitoes.

In passing we may note that even with tertian and semilunar parasites the anopheles sometimes fail to become infected, although the patients whose blood they were made to suck appeared quite suitable for the experiment. This might be due to many reasons. In the case, for example, of the semilunar bodies—if these are not mature or if, on the contrary, they have already grown too old in their human host—it may happen that no further development occurs; but even when the gametes are adult and mature (as may be ascertained by the facility with which in ordinary preparations they are transformed into flagellate bodies) it may still occur that in some of the anopheles no development takes place. And considering that we have met with some anopheles which were not infected even after having bitten suitable patients four or five times in succession we are obliged to conclude that the reason of the failure must be sought for in a complete immunity which some of these culicidæ enjoy.

Returning to quartan fever, we must say that with some patients constantly negative results are obtained. This led us to think at first that possibly the host preferred by the quartan parasites was not the anopheles claviger, with which in general we had experimented, but perhaps another species of anopheles or one of the culicidæ. But this suspicion was not borne out by other considerations. In the first place tertian and quartan fevers are always, or nearly always, found together in the same malarious localities (the well-known instance quoted by Trousseau being exceptional), thus rendering it unlikely that the host elected by the quartan should be a different mosquito from that preferred by the tertian parasite. In the second place we have had opportunities of observing that in some spots where quartan fever prevails—e.g., in a hamlet near the Tre Fontane—only anopheles claviger and various specimens of anopheles bifurcatus were to be found. We therefore repeated our experiments with the anopheles claviger, varying the conditions, or at least making use of patients who had been suffering from quartan fever for various periods, keeping the mosquitoes at different temperatures, &c. The results were that with recent quartans infection of the anopheles was not obtained. We experimented on at least five patients, some of them with numerous parasites, keeping the mosquitoes at a high or medium temperature and using a great many of them, but always without result. The attempt also failed with patients who had had the quartan fever for many months. On the other hand, we obtained some positive results from patients with very old quartans. One patient who was ill for about a year, whose blood, repeatedly examined, showed only quartan parasites, was bitten by 56 mosquitoes bred from larvæ in the laboratory (which, therefore, could not have been infected previously from man). In eight of these, kept in the warm chamber at 22° C., quartan parasites developed, all the stages of which we were able to follow up to the mature capsules with sporozoites.

The quartan parasite in the anopheles follows the same developmental cycle as the tertian and semilunar. The young forms are distinguished by the characters of the pigment and by their appearance; the adult forms with completely developed sporozoites were seen from 18 to 21 days after the bite. The reason of the negative results must be looked for, in our opinion, in the great scarcity, and in many cases in the absence, of gametes in the blood of quartan patients. It appears as if the quartan parasite had adapted itself so well to the parasitic life in man remaining

in his blood for years, as is well known, in spite of all therapeutic measures, that only rarely, and after a prolonged sojourn in its human host, does it develop those forms which are capable of continuing its life in the outer world. This scarcity of gametes, from which arises the difficulty of infecting the anopheles, explains likewise the relative rarity of the quartan as compared with the other varieties of malarial fever.

It does not appear to us admissible that, to obtain the development of the quartan parasites in the anopheles, a different temperature from that in which the tertian and æstivo-autumnal parasites accomplish their development is a necessity; in fact, nearly all the cases of quartan observed by us in the Hospital of Santo Spirito had contracted the fever in the summer or autumn—that is to say, under the same conditions of temperature and surroundings as the greater number of the tertian and æstival cases.[6] It would, however, be desirable to ascertain what the most favourable temperature is for the development of the quartan parasite in the anopheles. Judging from the observations made in the case above-mentioned, which gave the greatest number of positive results, one would say that the most favourable temperature is about 20° C. But further researches would be necessary before a positive statement could be made.

We have hitherto passed over the study of the first phases of development of the malarial parasites in the anopheles, in regard to which Grassi has recently published a short preliminary note.[7] The results of our observations as far as the semilunar bodies are concerned are as follows. The flagellates form rapidly in the intestines of the anopheles, so that impregnation must occur very quickly, but not for many hours after the anopheles has sucked the malarial blood can any changes worthy of notice be perceived in the round impregnated bodies (impregnated macrogametes). After from eight to 10 or 12 hours (the mosquitoes being kept in a warm chamber at 30° C.) one part of the round body becomes differentiated, forming, as it were, a small segment of a sphere and presenting in the fresh specimen a perfectly hyaline appearance. In the other part of the body the pigment is seen collected. From the hyaline portion there now protrudes a prolongation, likewise hyaline, its extremity rounded or somewhat attenuated, which little by little lengthens out, sometimes remaining quite straight, sometimes curving in a hook shape at its free extremity. At this stage of the development we have a figure composed at one extremity of a cylindrical, thinner, somewhat pointed part, and at the other extremity terminating in a sphere, which latter gradually becomes smaller as the cylindrical part grows until when development is complete it has disappeared. At this point the so-called vermicule is completely formed. As has been said, the pigment in the first stages of formation, lies only in the sphere described, and chiefly round its periphery; subsequently it migrates towards the cylindrical part where it tends to collect. In the well and fully-formed vermicule the pigment is found, at any rate in those seen by us, near to the pointed extremity. The protoplasm does not present an entirely homogeneous appearance, some (two) clear spaces being visible in it.

Studying these various stages of formation of the vermicule by Romanowsky's method it is found that the nuclear chromatin is more abundant in it than in the impregnated macrogamete and is disposed in the form of a ball of thread, the nucleus lying at the rounded extremity. In the protoplasm, which is stained blue, clear spaces are visible which have the appearance of vacuoles. In the first phases of development the chromatin presents the same characteristics and occupies the centre of the pigmented sphere. From this description it is evident that the so-called vermicules of semilunar origin present essentially the same characters as the vermicules of the proteosoma described by Koch.

These different phases, it is to be noted, were not seen by us succeeding each other in the same preparation; but by examining various preparations containing the different forms described we have, so to say, reconstructed the process. On this account we consider it more than probable that immediately the blood is removed from its favourable environment—the middle intestine of the anopheles—the process of formation of the vermicule is arrested. At a later period, after about 40 hours, the parasites are seen to have emigrated to the epithelium or more within the intestinal parietes, where they assume elongated (fusiform) or ovoid forms, recalling the fusiform or ovoid bodies of semilunar origin found in human blood.

This much, then, we now know (leaving out of account morphological details) of the development of the malarial parasites of man in the anopheles. All three species of malarial parasite, distinguishable with certainty from each other, adopt as host the same species of mosquito. Do they preserve intact the distinguishing characters of their species? To this question we have returned an affirmative answer, relying not merely on morphological data—that is, on the possibility of distinguishing in the mosquito the various species of malarial parasite, at any rate in some phases of their development—but also on the results of experiment. In fact, we had seen with Grassi that anopheles, after having sucked blood containing crescents, on subsequently biting a healthy person communicated to him the æstivo-autumnal infection; and recently we have made a corresponding test with tertian parasites showing that anopheles, after having bitten a tertian patient, become capable of inoculating tertian fever into a healthy person. Seeing that we had kept these anopheles infected with tertian blood at a temperature of about 30° C. this experiment allows us to exclude the possibility that the tertian parasite may be transformed into the æstivo-autumnal through the agency of the high summer temperature; in other words, it authorises us to exclude the hypothesis of a *seasonal polymorphism*, as it has been called, of the malarial parasites, by which theory we might think to explain how it happens that after the mild tertian fevers prevailing in the spring there should follow in the beginning of July the summer tertian or the pernicious fevers. Thus even after their passage through the anopheles the species of malarial parasites remain distinct and are not become transformed one into another.

Besides this result our inoculation experiments carried out with anopheles permit us to affirm that *a single infected mosquito* is capable of inoculating malaria into man. The knowledge of this fact has a great practical importance. We may even say more—namely, that a single mosquito by successive bites can infect several people; in fact, on examining some of the mosquitoes employed in our experiments after they had bitten the healthy subject, who had subsequently taken the fever, we have still found sporozoites in the salivary glands and mature capsules with sporozoites in the intestine, proving that, even if at a single bite the anopheles empties all the contents of the salivary glands, the glands may still become affected afresh. And, more than this, since it may occur that two species of parasite may develop in one and the same mosquito—for instance, an æstival and a tertian parasite—the two, as we have proved, remaining distinct, it can well happen that a single anopheles may inoculate a mixed infection—e.g., æstival and tertian. Indeed, it is well known that mixed infections of æstival and tertian fevers are by no means rare in Italy.

In view of these facts recently added to our knowledge, and from which it follows that the parasites of human malaria have two necessary hosts, man and anopheles, the study of a malarious locality and of a malarial outbreak must be approached from a new direction. Thus to explain in a complete manner the course of an epidemic of malaria it would be necessary to study, firstly, the malarial individuals; secondly, the malarial mosquitoes; and, thirdly, the places in which the larvæ of the anopheles develop, or that which constitutes a malarial soil in the traditional sense of the expression. The study of the malarial individuals ought, of course, to be made with the object chiefly of establishing as accurately as possible the time at which they took the infection; then the anopheles of the locality should be examined in order to learn what occurred in them during the same period; and, finally, these two orders of facts should be compared for the purpose of ascertaining what relation might exist between them. Such an investigation we have endeavoured to make since the spring of 1899, until the outbreak of the annual malarial endemic in the district of Ostia, a locality known to be highly malarious, in spite of the improvements which have been carried out there. The following is a short account of the results of this inquiry and of the inferences which we have drawn from them in regard to the practical measures likely to prevent infection.

[6] Grassi considers that the quartan parasites do not develop in the anopheles when the temperature is elevated. This view would be opposed to the epidemiological facts stated above.

[7] According to Grassi the zigotes assume very various forms "more or less recalling the radiæ, sporocysts, and cercaria of the trematodes," &c.—Atti dell' Accademica dei Lincei, Sept. 17th, 1899.

With respect to the study of the malarial patients we may say at once that the observations made this year go to confirm what we already knew from the experience of preceding years. In winter as a rule only *relapses* of æstivo-autumnal, quartan, and tertian fever are observed. As the season advances the relapses of æstivo-autumnal fever become more and more rare, until in the spring it is most difficult to find a patient with crescents; indeed, in the district of Ostia, notwithstanding repeated search, we did not succeed in finding a single case. On the other hand, relapses of tertian and quartan continue to occur right through the spring up to the commencement of the new malarial season, which begins in the first week of July with a sudden increase in the number of patients, among whom, besides many common tertians, are found the first cases of the new season's summer tertian. During the spring some rare cases of first attacks of common tertian are met with. These have been perhaps rarer this year than in past years. But although the possibility undoubtedly exists of contracting a primary infection of common tertian in the spring the *fact* remains that the malarial season proper, with its fresh outbreak of primary attacks, does not commence till the beginning of July and does not terminate till the end of the autumn.[8] This holds good for all the varieties of malaria as much for the common tertian as for the summer-autumn and the quartan.

A methodical examination of the patients admitted during that period to the Santo Spirito Hospital has led us to the same conclusion. From the first half of April till the first half of May the admissions to the hospital were relapses of tertian and quartan and, besides, four cases in which crescents were found. From May 21st to June 20th we examined the blood of 42 tertians, of five quartans, and of only one patient with crescents. The tertians, except two or three, had all had fever during the previous year; the quartans were all relapses; the patient with crescents had suffered from fever since the previous June. From June 20th to June 30th the patients were very few—seven tertians, one quartan, and five æstival—of which latter three were cases of first attack and two were cases of relapse. The last two patients had suffered from fever at irregular intervals since October of the previous year and showed crescents in their blood. At the beginning of July began, as usual, the influx of patients with primary infections—in fact, during only nine days (from July 1st to July 9th) we examined the blood in 26 cases of common tertian, 17 of which were, however, those of patients who had suffered from fever in the previous year and in whom, therefore, it was not possible to be certain whether we had to do with a relapse or a re-infection. During the same period the patients with æstivo-autumnal fever numbered 27, of whom certainly 17 had primary attacks.

From this examination of the patients admitted to the Santo Spirito Hospital we therefore drew the same conclusions as from our inquiry among those in the Campagna of Ostia. The only difference is that among those received into Santo Spirito Hospital we found some crescents (very rarely, it is true), while during the same period we found none in the Campagna. This may have been owing to the fact that only the peasants which have the gravest forms of relapse and the largest number of parasites take refuge in the hospital, whilst those which remain in the Campagna have so few parasites that the crescents are very difficult to find.

Let us now turn to the observations made contemporaneously on the anopheles, premising that in the whole district of Ostia (as in all the other places where, as, for instance, at Porto, the first tentative experiments with mosquitoes were made several years ago) the mosquito which almost exclusively prevails is the anopheles, and more especially the species anopheles claviger. In the months of March, April, and May we found anopheles in the houses, in the stables, and also under the bridges, generally with mature ova which for the most part were deposited after the mosquitoes had been brought to the laboratory. We found the same at Porto and at the Tre Fontane. In the month of June we began to find anopheles infected with malarial parasites, but only in small proportion—on an average about 3 per cent. of those caught in inhabited localities. Of those, on the contrary, caught in localities far from any habitation—for example, in a house near the small lake at Castel Fusano, in which there was at the same time a perfect swarm of larvæ—none were infected with the parasite of malaria, although they frequently contained other parasites—as, for example, a special brown sporozoon described briefly by Grassi and us, filariæ of at least two species, &c. It is thus evident that the few malaria-infected mosquitoes met with had taken the parasite from patients suffering from relapses of fever in whose neighbourhood they were living.

During the harvest season in June and beginning of July the number of infected mosquitoes remained very much the same. Wherever people congregated there also the anopheles gathered. For instance, the harvesters slept in the open until June 22nd, but on that date a large company of them were housed in a big granary which served them as a dormitory. On the 23rd, after a long search, a single anopheles was found in the granary; on the morning of the 24th eight were captured; and on July 1st no less than 366. Of these 90 were examined and only three were found to be infected, one of them with mature bodies and sporozoites in the intestine. Subsequently the number of infected anopheles increased at a rapid rate. It is instructive in this connexion to study what took place in an encampment of labourers (corn-threshers) near Ostia (on the Calabresi estate). The work there commenced on June 21st and continued till the beginning of August. About 42 men took part in it regularly (besides others of the floating population who could not be taken into account). Of these some had fever in the previous year and until the work commenced had suffered from relapses of tertian; in none were crescents found. Naturally we cannot exclude the possibility, however, that one or other may have had an extremely small number in his blood. Of the anopheles collected in the huts of seven of these people on July 1st two out of seven were found to be infected; of those collected on the 9th and 10th two out of 17; of those captured on the 17th 15 out of 32, or about 40 per cent.; and on July 20th the number of infected anopheles had risen to 11 in 17, or about 64 per cent., some of them presenting ruptured capsules and mature sporozoites. It is to be noted that the anopheles captured during the same period in the stables or at a distance from human habitations were, as a rule, not found to be infected. At the end of July and the beginning of August nearly all the men who had slept in these huts were affected with æstivo-autumnal or tertian fever. Evidently they had been infected by the mosquitoes which had invaded their huts and which had in their turn taken the parasites from those amongst the labourers who were suffering from relapses of fever. The progressively increasing number of anopheles found infected explains in the clearest manner, it appears to us, the final outbreak of the disease amongst nearly all the labourers.

It would thus appear from the above observations that the outbreak of the malaria endemic in its severe form at the beginning of July can be satisfactorily explained by the presence of anopheles which have become infected by the cases of fever relapses which are to be met with in May and June. Certain difficulties, however, present themselves to the mind which we cannot for the moment easily overcome. For instance, how are we to explain the great number of cases of æstival fever in the beginning of July, so many of which are certainly primary attacks, whilst in June the patients through whom the mosquitoes must have become infected had, so far as one could ascertain, the tertian variety of fever? It may be that the existence of crescents in some of these patients escaped our notice, a thing easily possible, since part of the population was a fluctuating one. But, even granting this, it is evident that in order to clear up the difficulty completely further researches are necessary.[9]

[8] Celli and Delpino: Contributo allo Studio della Epidemiologie della Malaria (Supplemento al Policlinico, Sept. 1st, 1899).

[9] The most common form of mixed infection, according to our experience, is that of æstivo-autumnal and tertian. The two kinds of infection do not manifest themselves simultaneously in the patient, but succeed one another; in fact, we have frequently seen patients with æstivo-autumnal fever, although residing in a locality free from malaria, suffer a relapse of common tertian, and, further, observed patients with æstivo-autumnal fever, in whose blood the æstival parasites were numerous, show also a very few tertian parasites without the clinical course of the disease being modified. These facts convince us that many of the patients who present themselves at the hospitals at the beginning of July with æstival infection apparently pure have been in reality inoculated likewise with tertian parasites. But the æstival infection develops first and alone, first of all because, as we know, its period of incubation is in general shorter than that of tertian fever; we also know that in the mixed infections one of the species of parasites always predominates and gives its stamp to the clinical picture, the other species developing when the first is temporarily or definitely exhausted. These considerations, together with what we know of the

Naturally, the new malarial season once fairly started, the continuation of the epidemic is easily explained by the passage of the hæmosporidia from man to the anopheles and from the latter back again to man.

Finally, coming to the third subject of our researches—namely, the study of the localities in which the anopheles develop—it is necessary to recognise the fact that at Ostia, in spite of all the recent improvements, there exist all the conditions favourable to the production of the malarial mosquito. The district of Ostia is intersected by a dense system of canals which collect the water of the lowest levels and convey it to the elevating machines by which it is emptied into the sea. This system of canals consists of a main channel with secondary channels leading into it. Now in all the secondary canals, and in the part of the principal canal farthest from the machines, where there grows a rich vegetation of reeds and algæ, we found, from the beginning of June onwards, an immense number of larvæ of the anopheles. The larvæ were absent in the part of the principal canal nearest to the machines, where the vegetation was scanty or wanting, and where the action of the machines kept up a considerable current. Everywhere else, wherever the water moved very slowly or tended to stagnate—which in summer is almost the rule, because the machines on account of the low water-level only work in an intermittent way—the development of the larvæ was most vigorous. Another very favourite breeding-place of these larvæ is in the neighbouring small lake on the estate of Castel Fusano. We found larvæ very numerous everywhere from the beginning of June onwards till the middle of July, when they were fewer; and they were again numerous there and elsewhere in the Campagna, especially in the small lakes at Porto, in the months of September and October up to the time of the last rains. These facts explain in an entirely satisfactory way why the drainage works at Ostia, in spite of the removal of the marshes, have not, from a hygienic point of view, achieved their object.

And now, what practical conclusions can be drawn from these data with respect to measures of prophylaxis against the infection? These are abundantly evident. Indeed, everyone in Italy who has made a study of the subject in the light of these new researches has insisted from the first that the careful treatment of the malarial patient constitutes one of the principal tasks of social hygiene. We ourselves, in a short article published last April, were careful to note that the energetic treatment with quinine, from the commencement of the infection, of the æstival fevers not only reduced the dangers of relapses to a minimum, but had evidently a great importance for general prophylaxis, since the parasites by its means could be prevented from developing into those forms which continue their life in the anopheles. The treatment of the malarial patient ought, therefore, to be carried out systematically and energetically in the same manner as is practised when countries are invaded by other epidemic and contagious diseases. And yet we see here in Italy the peasants of our country districts suffering for years from the disease abandoned to themselves and continually disseminating the infection. This could be put to the test of experiment by treating all the patients in some circumscribed area systematically throughout the winter and spring from the date of their first febrile attack (thus reducing relapses to a minimum) in order to see subsequently what the behaviour of the infection might be in the new malarial season—that is to say, from the beginning of July onwards.

We urge that the treatment should be carried out energetically from the date of the first febrile attack because we know that quinine, although it can interfere with, and even prevent, the development of the young crescents, has no evident action on those already matured. Indeed, we have several times seen since July of this year that crescents from the blood of patients under the influence of quinine may complete their life-cycle in the anopheles in the normal manner.[10] It is true that an ideal prophylaxis would be attained by removing the conditions which are necessary to the development of the anopheles in the malarial areas. Limiting ourselves to a consideration of the district of Ostia which we have studied we hold that such an object might, at least in part, be obtained by keeping the canals clear of the excess of vegetation, by removing the obstacles which in some of them retard the flow of water, and by working the elevating machines more regularly so as to maintain a certain degree of velocity in the current. By these means the immense production of the larvæ of the anopheles might be at any rate diminished. But it is not our intention to occupy ourselves with the question as to the method best adapted for attaining the end in view; this is a task which does not concern us. We confine ourselves to indicating the fundamental points which ought to guide those who devote themselves to a practical solution of the problem, those being a knowledge of the localities in which the larvæ of the anopheles live and develop and of the reasons why they thrive in these places.

Note.—We have stated in the above paper that nearly all the quartan patients observed by us in the Hospital of Santo Spirito had contracted the fever in the summer and autumn—that is to say, under the same conditions in regard to temperature and surroundings as are required for the development of æstivo-autumnal and the greater number of tertian infections—and we have inferred from this that the anopheles must in general become infected with quartan parasites under the same conditions of temperature as those under which they become infected with crescents and the gametes of tertian fever. This is not opposed to the fact which has long been known that the majority of quartan cases are met with in our hospitals in the autumn and winter—that is, in the cold season. Indeed, if the history of these patients be closely inquired into it is found that in general they have been residing in the Campagna during the hot season and have taken the disease in a form at first not characteristic of the quartan type, but that subsequently a relapse occurred, occasioned by the cold weather, and that this relapse ran a typically quartan course.

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greater pathogenic power of the æstival parasites, can be utilised for explaining, at any rate in part, the facts above mentioned.

[10] The same facts have been noted independently by our colleagues Gualdi and Martirano.

VOLKMANN'S ISCHÆMIC PARALYSIS; ITS TREATMENT BY TENDON-LENGTHENING.

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IT is probable that few only are familiar with the title of this paper. Examples of the disease are happily rare, and the name is not to be found in our text-books. Yet the affection is one of serious gravity and hitherto has been found little amenable to treatment. I propose, therefore, to record a case in which great benefit has accrued from lengthening the contracted tendons, not only by enabling lost movements to be regained, but also by restoring the affected muscles to a seemingly more healthy state. In describing the case I hope to bring the salient aspects of the disease forward and to point out the causes which induce it. Volkmann's own account of it may then be considered.

A boy, aged four and a half years, was first brought to my notice and admitted under my care in St. Mary's Hospital on Nov. 5th, 1898. In August he had fallen on his left elbow and sustained a transverse fracture of the lower end of the humerus. Separation of the lower epiphysis was not, however, excluded from the diagnosis. For some inscrutable reason the limb was put up in the flexed position with anterior and posterior splints on the forearm. All seemed going on well the next day and the splints were not disturbed, but when the child was brought to the casualty room a few days later there was found to be total loss of power of the fingers and wrist. Immediately below the fold of the elbow the pressure of the end of the splint had caused a superficial slough, which became detached in the course of four weeks and left an open wound which healed by granulation. In the meantime the limb was secured on a single posterior splint, and when this was abandoned at the end of four weeks the parents were instructed to manipulate and rub the arm, for an increasing tendency to contraction of the fingers had been noticed and the wrist also was becoming more and more flexed. On one occasion under an anæsthetic a fruitless attempt was made to straighten the fingers and hand. Such was the story related to me.

When I first saw the child, three months after the accident, the arm was supported in a flexed position midway

between pronation and supination. The site and surroundings of the scar below the elbow were exquisitely tender, and there was tenderness of the whole anterior surface of the forearm also, so that the child could hardly bear to have his limb examined. There was extreme flexion at the wrist and the fingers also were flexed into the palm. So great indeed was the contraction of the flexor muscles that extension of both fingers and wrist was hardly possible even with much force, but the joints were clearly unaffected. Strong flexion of the wrist had but small influence over the extensibility of the fingers. Anæsthesia was partial only, involving the ulnar distribution in the hand, and there was some suspicion of wasting of the first dorsal interosseus. The flexor muscles felt peculiarly unyielding to pressure and decidedly firmer than natural. With the exception of the nervous affection which has been named I could detect no median, ulnar, or musculo-spiral paralysis, and I attributed the slight ulnar paresis to local injury to the ulnar nerve at the site of the fracture, and possibly to the pressure of callus which was to be felt at the lower end of the humerus. My own belief was that there had in reality been a separation of the lower epiphysis. An examination under an anæsthetic threw no further light on the condition, nor was the contraction of the flexors in any way lessened. That this deplorable state of things was in some way the result of splint pressure there could be no doubt, and in all its aspects the case was exactly like two other cases which I had had the opportunity of seeing.

This, then, being the state of the limb, and massage, electricity, and movement being each and all without remedial influence, it was thought that lengthening of the flexor tendons gave fair promise of benefit, and accordingly, on Dec. 20th, 1898, the tendons having been exposed by raising a rectangular flap immediately above the wrist were each in turn split longitudinally, severed to right and left at the opposite ends of each incision, extended, and sutured with the finest silk in the usual way. This part of the procedure was by no means easy. The diminutive size of the tendons in the small arm of a little child made it very difficult to fix the sutures, and I had slight hope that successful union would follow. I was not sure, moreover, that in every instance the divided tendon was joined to its own partner, and it is highly probable that a superficial flexor may have been attached to one of the deep tendons. This was quite unavoidable. In any case I thought that it would not materially affect the ultimate result. Exposure of the muscles enabled us to judge of their condition. They gave the impression of being stiff and unyielding, firmer than natural, and as if their structure had been changed—not at all as if they were affected by some spasmodic contraction of nervous origin. This, indeed, was their state as I have already endeavoured to describe it when estimated by manipulation through the skin, and it suggested that there really was some alteration in the physical constitution of the muscle fibres themselves and probably also of the connective tissue around and between them. The hand and arm were now secured in the flexed position, and the wound healed by first intention. After a fortnight we ventured to move the child's fingers and it then appeared that considerable union of tendons must have taken place. Tentatively, therefore, day by day, and each day with increasing boldness, both arm and fingers were extended, and at the same time massage and electricity were brought to bear upon the affected limb. Improvement was very slow and the patient left the hospital in February, 1899, with a feeling of disappointment on our part that it had not been more decided, but with the hope that much might yet ensue. The child was to attend as an out-patient for electrical treatment and from Dr. Wilfred Harris, under whose care he has since been, I learn that there was at first very decided reaction of degeneration, but that recently this condition is not so marked. Reference will be made again to the electrical phenomena when considering the causation and underlying structural changes of this remarkable form of paralysis.

I next saw the child at the end of July and was happy to note distinct signs of improvement. That, with the one exception of the forefinger, the tendons had united there could be no doubt; tenderness of the limb was much less and the wrist and arm could be extended without anything like as much associated flexion of the fingers as had been remarked when the patient left the hospital. The mother was urged to continue her attendance at the hospital with every hope of still further improvement. When seen again at the beginning of October so great had been the progress that it was hard to believe that we had the same limb before us. All tenderness had gone. The forearm could be completely extended, the wrist and the hand could be voluntarily put in the extended position, flexion of the fingers was easy, and the little fellow could make a fist. The forefinger only was at fault, the flexor profundus alone acting on it. Furthermore, the muscles of the arm seemed to have lost that peculiar sense of resistance which had formerly characterised them. I had no longer any hesitation in holding out a much more favourable prognosis as regards the usefulness of the limb, believing that still greater improvement would surely be noticed as the limb in the natural process of growth increased in size. I feel justified, moreover, in placing the case on record now, sufficient time having elapsed to admit of a fair estimate of the result of operation.

Turning now to a consideration of the causes which induce this form of paralysis there is a consensus of opinion that in some way or other it is the prolonged pressure and fixation of the limb in splints which give rise to it. Thus Anderson[1] says: "It is a result of prolonged immobilisation of forearm fractures by any form of apparatus that intercepts the free circulation of blood through the muscles and nerves of the part." He seems in this extract to accept the view put forward by Volkmann as to the ischæmic origin of the affection and that it is not due primarily to a nervous lesion. On this point there is room for difference of opinion and the opinion of Volkmann himself may first, and very rightly, engage us. I find that the earliest reference made to it by him was in a footnote to a paper on inflammation of the muscles where he says[2]: "The severe contraction of the hand after too tight binding of the forearm after fracture belongs in part in all probability to such a process of inflammatory muscle-contracture and not to primary nerve-paralysis from pressure. The resultant *main en griffe*, as it is termed, has a very bad prognosis. The contraction of the fingers and hand remain so pronounced in spite of electrical treatment, passive motion, and forcible extension under an anæsthetic that amputation may in the end have to be resorted to. Complete recovery or even marked improvement I have never seen; and only in one instance, after unwearied trouble and long-continued treatment, have I noticed a diminution of the contracture and slightly better movement. The contracture comes on very rapidly and in a few weeks may attain to such a degree that the finger-nails bore into the flesh of the palm. In paralytic contracture no such acute contraction is ever seen." The next paper to which I will refer is by Kraske,[3] a pupil of Volkmann, and since distinguished in other spheres of surgery, in 1879, on the changes found in transversely striated muscles after exposure to extreme cold. His observations are based on the microscopical examination of the muscles of two legs which had been amputated for gangrene the result of some hours' exposure to extreme cold. He described widespread necrobiosis of the contractile substance, complete loss of the nuclei in many of the primitive fasciculi, and the absence of striation and a granular appearance of the fibres. Reparative changes were also distinctly visible, and then he writes: "The appearance of the muscle tissue corresponds closely to the changes which are seen in the muscles of a limb which has been for a time rendered bloodless by circular constriction. The ischæmia, induced in the one case by lowered temperature and in the other by circular constriction, determines a partial necrobiosis of the contractile substance, to which is added some precedent inflammation in the perimysium internum and regenerative processes in the surviving muscle fibres."

It is unnecessary to dwell further on the microscopical changes which are to be found in muscles which have been deprived of blood. The clinical phenomena are here of more concern, and a précis may be given of the conclusions at which Volkmann had himself arrived and which are to be found in his paper on "Die Ischaemischen Muskellähmungen und Kontracturen."[4] He there relates how the observation of a considerable number of cases in the course of several years had led him to believe that the paralysis and contracture, the result of too tight and too long fixation, were due to a direct effect upon the muscles themselves rather than to any nerve lesion. The following are his propositions: 1. The paralysis and contracture are of ischæmic origin and

[1] Fingers and Toes, p. 65.
[2] Krankheiten der Bewegungsorgane, 1875, p. 846.
[3] Centralblatt für Chirurgie, 1879, vol. vi., p. 193.
[4] Centralblatt für Chirurgie, 1881, No. 11.

dependent on the deprivation of arterial blood. The simultaneous venous congestion which is often seen appears only to hasten the onset of the paralysis. 2. The paralysis depends on the fact that the muscle fibres perish from prolonged want of oxygen. The contractile substance coagulates, breaks up, and finally disappears. Rigor mortis is in fact induced in the affected muscles. 3. It is especially characteristic that paralysis and contraction arise simultaneously, not as in paralysis of nervous origin where contraction is a later phenomenon and of gradual onset. 4. From the earliest moment and in quite recent cases the muscles assume the state of rigor mortis and there is the greatest obstacle to extension of the limb. 5. By contraction of the material thrown out in the attempts at repair the rigidity and contracture of the limb are made worse. 6. Ischæmic paralysis and contracture of the same nature are also seen to follow the application of Esmarch's bandage, injury to the greater vessels, and exposure to extreme degrees of cold. 7. The degree of paralysis and contraction depends upon the length of time that the blood-stream has been arrested. If the ischæmia has been extreme the most serious consequences may follow in half a day, or even less, while symptoms of a high grade of severity may result from slight constriction and pressure of several weeks' duration. This is most common after fractures of the radius. 8. The prognosis is bad, and in the worst cases involving the hand and fingers the condition is absolutely irremediable. It is better in the case of the lower limb, for here tenotomy may be practised. The slighter cases may be benefited by energetic treatment with massage, &c. 9. Mechanical treatment is practically useless. In recent cases one would endeavour to extend the muscles under an anæsthetic; but in those of long standing any attempt to do so would be found to break the bones or tear the tendons before the muscles would yield.

So far Volkmann, in unavoidable abbreviation, and with the single exception of Anderson's work already referred to I have failed, even with the invaluable help of Mr. Plarr, Librarian of the Royal College of Surgeons, to find aught else in medical literature upon this interesting subject. That this singular form of paralysis is due to the combined influences of pressure, fixation, and ischæmia there can hardly be a doubt, nor is there any doubt that my own case was an example of it. The rarity of the condition is probably one reason why so few cases have been placed upon record; but it is not unwarrantable to assume that some have not seen the light because, in the words of Anderson, the paralysis is "a reproach to surgery, since a careful observation of the hand and fingers during the use of splints will always give due warning of the danger."

It is not, however, by any means so certain which are the structures upon which continuous pressure exerts this injurious influence. In the observation of my own case I could never believe that it was simply a nerve lesion with which we had to do. The slight ulnar paresis was obviously the result of a trifling injury to the ulnar nerve at the site of injury to the bone, and there was no reason for thinking that the pressure of the splints could have been specially exerted upon this one nerve. If upon any, the median was surely more exposed to pressure, but there was no special evidence of injury to it, and as pointed out by Volkmann the simultaneous origin of the palsy and the contracture was altogether unlike the effect of gross lesion to a nerve trunk. But the electrical observations of Dr. Wilfred Harris show indisputably that nerve elements had not escaped injury. After describing the reaction of degeneration which he discovered, he says, "Any ischæmic condition would, I imagine, damage the nerve-end-plates as well as the muscle and one might expect, I should think, some reaction of degeneration." Mr. Anderson tells me that this view coincides exactly with his own as given in a previous quotation. Dr. Harris adds in a later communication: "The fact of the great reduction to faradaism in the flexor muscles when I first saw the case suggested to me a nerve lesion, perhaps intra-muscular, and does still, since in acute myositis there are no electrical changes until the late stages when atrophy, if any, sets in. Erb, too, states positively in his book that primary muscular conditions do not cause reaction of degeneration, which is in his opinion proof of nerve lesion. But I know nothing of ischæmic myositis and probably Erb did not either and the reactions may very well be a part of the condition as you suggest. The obvious answer to the difficulty would I think be supplied by experiment." I have ventured to repeat here what Dr. Harris has written to me, for he speaks with an authority on such matters to which I cannot pretend. But nothing that he tells me is, I believe, opposed to the view which I would provisionally hold as to the causation of this particular form of paralysis and contracture, that it is not primarily or even in the main due to a nerve lesion but that it is due to the combined effects of pressure, immobilisation, and greatly diminished blood-supply therefrom upon the muscular elements, the connective tissue elements, and the nervous elements which are met with in every muscle throughout the body. That pressure alone, or immobilisation alone, or deprivation of blood alone could bring about the results which are seen is not nearly so likely as the combination of all three, and there is no part of the body on which they can be so readily brought to bear as in the case of the forearm bound up and negligently left bound up after fracture. May the publication of this case be the means of making the evil consequences of such ill-treatment more widely known.

Lastly, as to the tendon-lengthening which was practised here. It seemed to me that it offered the best chances of amelioration of the distressing condition, and from personal experience of it in other instances and for other purposes I felt that the operation was one upon which we might rely. Originally performed and recommended, I believe, in this country by Anderson, and a year later in America by Keen, the operation has become a recognised procedure of much value in surgery, and has doubtless been used by many surgeons. Keen[5] employed it in a case of post-hemiplegic contracture of the flexors of the fingers in a lady 25 years of age, and lengthened four tendons of the deep flexors, five of the superficial and those also of the two carpal flexors, of the flexor longus pollicis, and of the palmaris longus with some measure of success; and Anderson[6] records a case of a girl, aged 17 years, with flexor contraction the result of some injury to the arm in childhood for whom he lengthened the tendons with much benefit. I am further indebted to my friend Mr. Anderson for the opportunity of reading the accounts of two other cases by Dr. Colgan and Dr. Wilson respectively, but they have no special bearing upon the subject of tendon-lengthening in such a condition as was seen in my own case. Akin to it, though owning a different cause, were the cases of Anderson and Keen; but there is, I believe, no case on record in which it has been practised in Volkmann's ischæmic paralysis. The result has far exceeded expectation, and I take it that the great improvement is due not alone to the mere fact that the tendons have been made longer, but that by their lengthening an increased range of movement has been made possible in the affected muscles. Muscles are meant for movement, and movement is an essential element in the treatment of any such affection as the peculiar contracture seen in this disease. Massage and electrical stimulation are also without doubt of inestimable value, but they are likely to fail of their purpose unless some movement is possible at the same time. At any rate, speculation apart, the result of the operation in this instance has been so satisfactory as to justify me in commending the adoption of the same method to the notice of surgeons.

HYPOTHERMIA.[1]

BY E. B. HULBERT, M.D. DURH., M.R.C.S. ENG., L.R.C.P. LOND.

A MAN, aged 36 years, married, the father of three children, was admitted into University College Hospital under Dr. Charlton Bastian (whose clinical clerk I happened to be at the time, and for whose kind permission to make use of the notes of the case I am deeply indebted) on April 16th, 1887, complaining of drowsiness and occasional frontal headache of about two years' duration. He had had scarlet fever when he was a lad and soft chancre ten years before coming under observation, but he denied syphilis. There was no history of nervous disease in the family. He

[5] Transactions of the College of Physicians of Philadelphia, 1891.

[6] Loc. cit., p. 58.

[1] Being a contribution to a discussion on Temperature in Health and Disease, read at a meeting of the Windsor and District Medical Society on Dec. 20th, 1899.

had been for some years a chemist's assistant, but had latterly been dismissed from his situation in consequence of his marked drowsiness, which at times led to his falling asleep over his meals and when at work, and because he was not always responsible for his actions. Thus on one occasion he was found on the doorstep of a strange house far from home, and on being questioned could give no account of himself and had no recollection as to how he arrived there.

As the man remained in the hospital, with the exception of about ten weeks, until his death on Jan. 2nd, 1888, the notes of the case are naturally voluminous, and the following epitome of his leading symptoms may suffice. Delayed cerebration; occasional mild delirium, diurnal or nocturnal, and at times of a restless type; speech slow and scanning; the skin temperature was obviously depressed; pin-point pupils, reacting to accommodation but not to light; knee-jerks and ankle clonus were absent; no definite spasms or paralysis, either of motion or sensation, until a late period in the case, when generalised twitching movements of the limbs and face occurred; during the same time there was noted want of control over the sphincters; the pulse was regular, of fair volume, the rate varying, directly as the temperature, between the extreme limits of 36 and 170 per minute; the respirations also varied in the same manner from 10 to 48 per minute and at the close were of the Cheyne-Stokes type. The somnolence, always present, was variable in degree but increased as time wore on, and the patient finally died in a comatose condition. The diagnosis made was that of some diffuse degenerative change in the brain, possibly sclerotic in character, and beginning chiefly in the pons and medulla.

A most careful post-mortem examination was made and numerous microscopical sections were cut from the cerebrum, cerebellum, pons, medulla, &c., but no gross lesion was discovered in any part of the body.

The interest of the case is chiefly centred in the records taken of the temperature, which was taken on 88 days, commencing on Oct. 5th, 1887, several observations, even as many as 11, being made daily; on only 18 days was the temperature found to register above 98·4° F. The rectal thermometer, which was used for the majority of the readings, was made by Hawksley and was very carefully compared with a standard instrument registered at Kew, made by Casella, and great care was taken to avoid erroneous observations, thermometers being not infrequently placed simultaneously in the mouth, the rectum, the axilla, and even in the urethra. From Oct. 6th to the 16th inclusive the temperature was not accurately recorded, as the ordinary clinical thermometer used was not marked below 95°. The same happened on Nov. 2nd and 3rd, and again from Nov. 9th to the 14th; the rectal instrument on this date recorded 83·3°, and on the same day, without obvious cause, the temperature rose 12·6° in nine consecutive hours, reaching 95·9°. Two days later it sank 13° in 16 hours, the thermometer left in the rectum for half an hour marking 82·3°. On the next day the temperature was slightly lower, and on the following day the minimal temperature in this case was recorded—viz., 81·6° in the rectum (half an hour's observation)—and simultaneously a surface instrument placed on the chest-wall for two hours registered 75·5°. At this stage a hot bath was given, the temperature of the water being gradually raised from 98° to 105°, and the patient's temperature rose 13·1° in 67 minutes and 19·5° in 18 hours. It then became slightly raised above normal for a day or two and again descended, a reading of 90·2° (skin of the chest one hour) being obtained on Nov. 21st. The descent continued with fair uniformity, successive readings of 91·5° (axilla), 89·1° (axilla), 88·3° (rectum), and 85·7° (rectum) being obtained. An hour spent in a hot bath again produced a rise of 13·6°, but the effect was only temporary, 85·5° (rectum) and 85·3° (rectum) being noted. Here the temperature rose somewhat rapidly, and shortly after death marked 104·8° in the rectum.

The literature on the subject of subnormal temperature appears, on the whole, to be scanty, and it is certainly, according to my experience, widely diffuse. A brief epitome may, therefore, not be entirely out of place.

Erichsen[2] says that in fracture of the lower cervical region the temperature may rise to 111° or may sink to 81°, but that the cause is not well understood.

Roberts[3] enumerates amongst the conditions producing subnormal temperatures shock, collapse, severe injury to the upper part of the spine, some diseases of the brain or spinal cord, starvation, severe hæmorrhage, and some chronic wasting diseases—e.g., cancer. Regarding cholera, he says that in the stage of collapse the temperature in the mouth ranges from 79° to 88°, in the axilla from 90° to 97°, but that it reaches a much higher level in the vagina and rectum. Also, "a very low temperature has been noted in carbolic acid poisoning and in sclerema neonatorum." He states, "Should the temperature fall below 93° death almost always results."

Russell Reynolds[4] corroborates certain of these statements.

Bristowe[5] says: "In collapse—the result of severe injury—the temperature even in the rectum may fall (Wagstaffe) as low as 82·15°."

Quain[6] states: "A temperature of 71·6° has been observed in sclerema neonatorum." And again, "The whole range of temperature within which life can well be maintained is comprised between 90° and 110°.

Landois and Stirling[7] mention Löwenhardt as having found that "in paralytics and in insane persons several weeks before their death the rectal temperature was 86° to 87·8°." Also, "Beckterew found in dementia paralytica before death 81·5° in the rectum; the lowest temperature observed and life retained was in a drunken person—75·2°[8] (Reinke, Nicolaysen)."

Fagge[9] says: "A great lowering of temperature by *force majeure*, as Liebermeister terms it, is well seen in persons picked up insensible in the streets during cold weather. Cohnheim alludes to cases of this kind in which the thermometer in the rectum has not risen above 86°, 79°, or even 75°. The pupils are then dilated[10] and sluggish, whilst the pulse and the respiration are greatly reduced in frequency, but unless things have gone too far for recovery to take place such persons under suitable treatment regain their normal temperature in a few hours, or even pass into a condition of reactive pyrexia." Regarding the stage of collapse in cholera he says: "According to Goodeve a thermometer placed in the mouth indicates from 79° to 82°. In the axilla, however, the temperature is seldom below 93° or 94° and in the rectum or vagina it rises through the period of collapse, reaching 100°, 102°, or even 104°."

Gould[11] quotes a case recorded by Duffy in which the temperature in the mouth and axilla marked 84°. The patient was a negress, aged 35 years; she aborted, and death took place on the following day.

Osler[12] treats the subject at greater length. Amongst conditions giving rise to a subnormal temperature he refers to: (*a*) Acute alcoholism, especially when aggravated by exposure to cold. Thus are explained the lowest reported temperatures. He mentions a patient who was admitted under these conditions with a temperature of about 75°; ten hours later the temperature had not risen to 91°. (*b*) Cerebral hæmorrhage. "Here it is often subnormal" (Bastian). He quotes a case in which it sank below 95°. (*c*) Heat exhaustion, especially when combined with physical exertion. It may be as low as 95° or 96°. (*d*) Acute tuberculosis. (*e*) Ague (cold stage). The skin temperature may be low. (*f*) Pernicious malaria—the algide stage. (*g*) Chronic tuberculosis. He quotes a case in which the temperature was 95°. (*h*) Tuberculous meningitis. At the close the temperature may be as low as 94°. (*i*) Uræmic convulsions—after the attacks.

Finally, Wunderlich, in his monograph on Medical Thermometry, published by the New Sydenham Society, as the result of 16 years' assiduous work in this field, deals still more elaborately with the subject. He says: "Exceedingly low temperatures are very commonly met with in the following: In the remissions of a remittent fever; in consequence of loss of blood or powerful evacuations; in the course of defervescence when this is excessive, and sometimes in the death struggle." Treating of collapse, he observes that the temperature very seldom sinks below 91·4°. He defines "collapse temperatures" as those below 96·8° and classifies them thus: (*a*) deep fatal algide collapse below 92·3°; (*b*) algide collapse from 92·3° to 95°. In these

[2] Science and Art of Surgery, ninth edition.
[3] The Theory and Practice of Medicine, second edition, p. 178.
[4] A System of Medicine, vol. i., p. 691.
[5] The Theory and Practice of Medicine, sixth edition, p. 116.
[6] A Dictionary of Medicine, vol. i., p. 1600, article "Temperature."
[7] Human Physiology, second edition, vol. i., p. 467.
[8] Locality of observation not recorded.
[9] The Principles and Practice of Medicine, second edition, vol. i.
[10] The pupils were at all times markedly contracted in the case now recorded.
[11] Anomalies and Curiosities of Medicine.
[12] The Principles and Practice of Medicine, last edition.

circumstances it is possible to save life, but the patient is in the greatest danger; (*c*) moderate collapse from 95° to 96 8°; this is in itself without danger. He quotes Fleury as having observed the temperature of a subject in a cold bath sink to 93 2°, or even to 84·2°. Later he says: "Although in certain cases of cholera temperatures of 78·8°, or even lower, have been observed on the surface of the body we may be almost sure (from other observations in the same disease) that the rectal and vaginal temperatures were considerably higher." Again: "Löwenhardt [3] has published four cases of insanity in which lower temperatures occurred than in any hitherto observed. Before death, and indeed for several days, they showed 77°, 85 1°, 74·7°, and 82 4° They were very old people who got out of bed in the coldest time of the year, and ran about naked, and from their dirty habits were constantly being bathed, and who took hardly any food; in one case the pulse was only 45, and in another only 23 per minute." He quotes Magnan as giving a vaginal temperature of 78·8° in a drunken woman who lay out exposed to sleet all night. The temperature became normal in two days. Wunderlich states[14] that the lowest temperature which he had seen followed by recovery was 92·3° (the pulse beating 62 times in the minute). This was an instance of "collapse of defervescence" in enteric. Again, referring to cholera,[15] he observes: "The cutaneous temperature even in the axilla during the algide stage is, as a rule, diminished, sometimes, indeed, very greatly so, yet not often below 95°. The temperature under the tongue may be still more diminished. In the stage of asphyxia the temperature there seldom exceeds 87 8°, and even in cases which recover may fall to about 78 8°. If it fall below this recovery would appear to be impossible." A little further on[16] he quotes two cases, reported by Fischer, of injury to the cervical cord in which temperatures of 93·2° (rectum) and 86·3° (axilla) were recorded; and likewise a case (Wagstaffe) of fracture with dislocation of the sixth cervical vertebra where a temperature of 92 3° was recorded on admission which sank to 81·7° in the ensuing 45 hours, the patient dying three hours later. Later still,[17] he refers to the influence of inanition, especially when aggravated by exposure, loss of blood, vomiting, diarrhœa, exposure to cold, &c. Just before death the temperature may be very low, especially in the syphilitic marasmus of children, of which he gives an instance with a temperature of 77° in the rectum. He also notes a case of ordinary marasmus in which the temperature was 83 4°, and declares on Roger's authority[18] that the axillary temperature is very low in congenital induration of the areolar tissue (sclerema) of new-born children. Roger found that in 29 such cases the average temperature was 87 8°, and of these in seven cases it marked less that 78 8°

Greenhow [19] has reported an axillary temperature of 84°, but the nature of the case is not stated, and included in the charts at the end of Wunderlich's remarkable monograph are three examples of subnormal temperatures—Fig. 10, temperature 92·3°, typhoid with collapse (this patient apparently recovered); and Figs. 75 and 76, temperatures 95° and 95·1° (both these patients died from acute miliary tuberculosis).

Windsor.

A MODE OF OPERATING IN CASES OF APPENDICITIS,

ADAPTED FOR USE ON ANY DAY OR AT ANY STAGE OF AN ACUTE OR SUBACUTE ATTACK, THOUGH NOT INDICATED IN EVERY CASE.

BY C. B. KEETLEY, F.R.C.S. ENG.,
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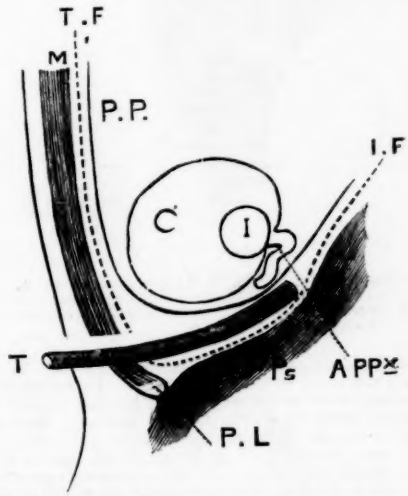
WITH reference to Mr. C. Mansell Moullin's interesting paper, "Early *v.* Late Operation in Cases of Inflamed Appendix," which appeared in THE LANCET of Dec. 16th, 1899 (p. 1657), and to Mr. James Berry's valuable letter on the same subject in THE LANCET of Dec. 30th (p. 1857), I would call attention to the circumstance that both these gentlemen when writing of "early operation" for appendicitis evidently mean one which opens the general peritoneal cavity and removes the appendix. I wish to describe another mode of early operation which has, I believe, certain advantages.

I would say previously that to some extent I share Mr. Berry's belief that early operations for the removal of the appendix are occasionally performed which result in the loss of life which patience might have saved. But the cases of this kind which have come under my observation have never been *very* early operations. None had been operated on in the first 36 hours. Such a rule as that of waiting until the fifth day I should strongly object to. I believe that more cases operated on from the fifth day to the tenth day are fatal than any others. But that may be because many physicians who do not call in the surgeon till the fifth day would not call him in at all if the symptoms were less serious than those of general peritonitis or acute intestinal obstruction. Therefore I feel, and always have felt, the force of what is really the point of Mr. Moullin's paper—viz., Are we still to fold our hands and leave to chance so many cases the course of which we cannot foresee with certainty? When Mr. Berry writes that, "provided that the patient be kept *absolutely at rest* in bed and not disturbed by purgatives or enemata or other injudicious treatment" diffuse peritonitis rarely supervenes, he is probably right. An exceedingly able and practical physician used to make this view the basis of a firm opposition to *all* surgical intervention of any kind and at any time. A few years ago he suddenly veered to the other extreme, driven thither, I suspect, by a run of ill-luck. Delirium, obstinacy, disobedience, the feeling that "a good motion would relieve all the symptoms," fussy relatives, careless nursing, have all been known to disturb the perfect rest, &c., prescribed for these cases. Another danger is that of heavy-handed palpation of a small collection of pus or of a recent extravasation. Tenderness generally prompts the patient to protect himself from this, but when he is well dosed with opium that protection may be lost. The argument in favour of early intervention is not dependent on statistics, which, as Mr. Berry himself shows, may be easily manipulated. Still less does it rest on Mr. Moullin's personal statistics, whatever they may be.

The mode of operating which I believe to be at all times safe, whether on the first or last day of an acute, a subacute, or a chronic attack (I do not say that it is at all times and in all cases indicated) may be described as follows. It takes into consideration the path by which the pus, when pus forms, usually mounts to the inguinal region of the

FIG. 1.



Rough diagram to illustrate the operation. T. F., Transversalis fascia. M., Muscular and aponeurotic layers of abdominal wall. P P., Parietal peritoneum. C., Cæcum. I, Ilium I. F., Iliac fascia APPx, Appendix vermiformis. I-Ps., Ilio-psoas muscle. P. L., Poupart's ligament. T, Drainage-tube.

[14] Loc. cit., p. 204. [15] Loc. cit., p. 421. [16] Loc. cit., p. 208. [17] Loc. cit., p. 428. [18] Loc. cit., p. 429. [19] Loc. cit., p. 428.

[19] Brit. Med. Jour., 1870.

abdominal wall and it goes to meet it. At the same time it keeps as often as possible outside the peritoneal cavity.

The surgeon proceeds somewhat as if he wished to tie, extra-peritoneally, the common iliac artery. 1. The skin is incised above the anterior superior iliac spine and the outer half of Poupart's ligament, in a line parallel to the latter. 2. The external oblique aponeurosis is divided to the extent of the skin incision. 3. The deeper muscles are penetrated as much as possible by separation of their fibres and towards the outer part of the skin incision by cutting with scissors. 4. The transversalis fascia is divided. Hæmostasis is effected by the way customary with the surgeon operating. 5. The peritoneum is carefully separated from the iliac fascia, the surgeon at the same time palpating for the *deep surface* of the appendix or for the inflammatory thickening around it. 6. A strong light is thrown into the depths of the wound and signs of inflammatory infiltration of the tissues such as indicate the neighbourhood of pus are looked for. 7. If pus is found the infiltrated tissues are carefully torn open with two pairs of dissecting forceps, not cut or roughly punctured. 8. Whether pus is found or not two drainage-tubes of medium calibre are carried to the bottom of the wound. If a collection of pus is swabbed out the greatest gentleness should be employed. It is better not to use the douche or syringe.

Some critical person may say, "Why this is the ordinary mode of opening an abscess secondary to appendicitis." He will be mistaken. In the common operation for opening such an abscess, step 5 of my operation, which is all-important, has sometimes been performed roughly by the pus which has come to meet the surgeon. In my operation step 5 is performed by the surgeon who is going to meet the pus or, at least, to search for the appendix, and not waiting for some fifth, sixth, or other particular day when it may be the good pleasure of the pus to come to him, unless it should in the meantime prefer to spread with a burst all over the peritoneal cavity or elsewhere.

FIG. 2.

P. S., Promontory of sacrum. S. P., Symphysis pubis. A. Iliacus. C and B are on the psoas. The triangular area A B C indicates roughly the place in which the peritoneum is raised from the iliac fascia.

If in separating the peritoneum from the iliac fascia the former should be accidentally torn, use the opening for the purpose of an exploratory laparotomy, then close it with a suture and protect it with a thin fold of iodoform gauze wrung out in a solution (1 in 2000) of warm sublimate and continue the operation. If the appendix does not occupy its usual position behind and beneath the cæcum, or if the cæcum itself is abnormally placed, I need not say that indications of this may often be found before the skin is cut at all. If the cæcum and appendix are high up towards the iliac crest the parietal incision may be extended upwards, and, finally, a lumbar incision made for the drains (or one of them) which may still, with care, be kept extra-peritoneal. If the appendix is unusually near to, or even internal to, the brim of the pelvis it may be possible to reach it by directing the deep dissection rather inwards towards the pelvic brim. If the appendix, in spite of inflammatory thickening, floats free in the peritoneal cavity and the latter shows no sign of infection, I see no reason why the appendix should not be excised, whatever the day be, the first, second, or any other. If it is the centre of adhesions, possibly bounding pus, and the thickened mass floats comparatively free in the abdominal cavity then (1) if it can be done without tension, bring the inflamed mass and fix it by sutures through healthy tissues to some part of the parietal wound and leave that part of the wound open; (2) if the above course cannot be followed without dragging on the bowel either carry a drain down to the inflammatory mass or leave it alone altogether. Do not tear open the adhesions and remove the appendix if the patient is at the time in the throes of an acute or subacute attack, but wait till the temperature is normal or nearly so, watching the patient narrowly, giving him no opium, and re-opening the abdomen at once should signs of extension of the mischief appear.

There are two facts bearing on the above recommendations to which I would call attention. One of these is the remarkable tendency which pus and even fæces have to find their way out of an opening in the anterior abdominal wall if they have a chance of access to it, and in apparent opposition to gravity. I used to think, till experience taught me the contrary, that such infectious and polluting materials preferred to gravitate into the pelvis. Perhaps they would do this, but the pelvis is already fully occupied with intestines and other organs which behave as if they had a prior right there and resist displacement. Their resistance is, of course, overcome when there is intra-peritoneal fluid which cannot find a way out through some recently made parietal wound. The second fact is the impunity with which a limited part of the peritoneum may come into contact with septic fluid, provided that the latter is speedily and completely wiped off with sublimate swabs or carbolised sponges. Somewhat allied to this is the safety with which intestine may roll into the cavity of a pelvic abscess a few minutes only after that cavity has been thoroughly scraped, swabbed, and cleansed. No sensible person, of course, would leave them there, but I have been obliged more than once to leave intestine to form part of the wall of an abscess cavity so treated, because the abscess wall itself, when radically dealt with, no longer sufficed to shut off the general peritoneal cavity. No harm resulted, except once a temporary fæcal fistula leading into the small intestine. In this case a rectal fistula opened into the abscess cavity before operation and made permanent purification of it impossible.

In the last few years I have frequently operated on the principles above enunciated. A striking example of their application was the case of a middle-aged sergeant of police in the West London. His condition was at the time alarming; he had a distended abdomen, sickness, frequent pulse and respiration, and a temperature of 104° F. I reached the deep surface of the thickened mass around the appendix but found no pus. However, the tip of the palpating finger smelt distinctly of putridity. Drainage-tubes were passed in and the temperature fell at once, within 48 hours pus flowed, and within a fortnight a fæcal concretion came away. Ultimately I removed the appendix, more because it was necessary for him to return to duty within a certain time than for any other reason. This case impressed me because of its striking resemblance to cases in which I had seen intra-peritoneal operation with removal of the appendix during an acute attack result fatally. Nevertheless, had my patient been the subject of general septic peritonitis at the time the simple operation above described would not have saved him. The general peritoneal cavity itself would have had to be dealt with through a median incision and with counter openings.

I wish to add that I have had no experience of operating by any method on acute cases of appendicitis within 36 hours of the onset. I envy alike Mr. Mansell Moullin and Mr. Berry the possession of medical friends progressive enough to give the former the opportunity of operating on these early cases and the latter that of letting them alone

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PRESCRIBING ALCOHOL *versus* OUR OWN INTERESTS.

BY FREDERIC C. COLEY, M.D. DURH.

WHERE well-to-do patients are concerned it is often our duty to recommend entire and permanent abstinence from all stimulants when regard to our own interests would suggest a prescription more in accordance with the patient's tastes and prejudices. But when we have to do with the working classes we shall be very short-sighted if we do not perceive that duty and self-interest more commonly point in the same direction. Let it not be assumed that in what I am stating I suppose a low state of morality in the medical profession. I am merely calling attention to facts which indicate that what is to the advantage of the community in general tends also to the profit of the medical profession in particular.

We have heard much of late about the abuse of hospitals by people resorting to them who are well able to pay for medical treatment. Now the practical question is not, how much does a man earn, but how much has he available for such purposes as paying for medical treatment for himself and family whenever that happens to be required? A lurid light is thrown on this question by the very carefully elaborated statistics of Mr. Rowntree which show that working-class families spend on an average 6*s.* a week on alcoholic liquors. If we could take out of the reckoning the many thousands of teetotal families who spend from choice nothing on alcohol and the very poor who from necessity spend very little the average expenditure of those families who indulge freely in alcohol would of course be found to be much more than 6*s.* a week. Nor is this all. Many employers of labour complain that large numbers of men who make good wages do not make nearly so much as they might, simply because they devote two or three days a week to idle drinking.

Now it is no doubt true that some people who have the money to pay for medical treatment prefer to apply to a hospital from mere stinginess. But it is more to the purpose that working people who waste more than 6*s.* a week per family cannot do otherwise than depend upon charity for medical treatment when they require it. So that although a radical change in the habits of these families in regard to drink would not *necessarily* improve their relations with the medical profession it is impossible for that desirable result to be brought about without it. It follows, therefore, that it is to the interest of the rank and file of the medical profession to encourage the practice of total abstinence with all their might. I am not going to suggest that we should all straightway "sign the pledge" and become members of the British Medical Temperance Association—though we might take more suicidal steps than either of these. But this we can easily do: make it a settled rule of our practice never to prescribe alcohol unless we are convinced that no safer remedy will produce the desired effect, and never to prescribe it at all for trivial ailments. Whenever we believe that alcohol is necessary and no other remedy will serve as well, then it is prudent to avoid the ordinary commercial forms of alcohol and prescribe rectified spirit, to be dispensed in a medicine bottle and flavoured as may seem desirable. In this way only can we secure scientific accuracy in the strength and dose of the stimulant and we materially lessen the danger of the use of the drug being continued after the need for it has ceased. And we should never forget one very strong argument in favour of the course which I am recommending—viz., that the mere presence in the house of any of the ordinary forms of alcohol may be a dangerous temptation to other members of the household beside the patients for whom it was prescribed.

But we need not, and ought not, to be content with merely avoiding the prescription of alcohol except in extreme conditions and even then taking special precautions lest our prescription might do harm directly or indirectly. We should take every possible opportunity of using our whole influence to enforce the conviction that the habitual use of alcohol is not only unnecessary but positively unfavourable to health and long life. The statistics of life insurance companies and friendly societies will furnish us with ample justification for taking this position.

It does not admit of doubt that if the whole of the medical profession would act upon the principles just suggested before long some millions of pounds would be diverted from the liquor trade to more desirable channels, and the result would be a great gain to all concerned except the liquor traders. And even they would lose very much less than the community as a whole would gain. For the enormous indirect loss from alcoholism by the ways of sickness, and idleness, and imprisonment, and general inefficiency, brings no gain to anybody. Until this stupendous waste of money and the power to earn money is greatly diminished a very large part of the working classes must be more or less dependent upon charity in times of sickness. And medical charity is the kind which is most readily sought by people who would not think of asking for charity in any other form. Hence the problem of the inadequate remuneration of the medical profession and the drink problem are very closely related.

But there is a more altruistic aspect of the drink problem which should appeal with especial force to medical men. The prevention of phthisis and other forms of tuberculosis is a matter in which we are all most keenly interested. Overcrowded, ill-ventilated, dark, and dirty tenements are just the places where the tubercle bacillus finds its victims and spreads readily from one to another. And they, going out and scattering their infective expectoration in railway carriages, &c., become dangerous to others whose homes are too airy and cleanly to give the bacillus much chance to live outside of the human body. The prevention of tuberculosis is hence mainly a question of improved dwellings for the people. In London the housing of the working classes is a problem beset with special difficulties. But in most other places it is simply a question of £ *s. d.* It hardly needs pointing out that less than 6*s.* a week (the average amount shown to be wasted on drink by the families of the working classes) is needed to make the difference between the rent of two crowded rooms in a filthy, unhygienic tenement house and the rent of a decent home in a fairly wholesome neighbourhood. It follows that nothing is likely to have such a decided influence in the prevention of tuberculosis as the general adoption of the practice of total abstinence from alcohol.

The majority of the medical profession know the ways of working men well enough to be quite aware, from their own observation, that a working man who does not abstain from alcohol altogether commonly spends much more upon it than he can well afford, even though he may not deserve to be called a drunkard. We ourselves may be fortunate enough to possess an income which places us above the necessity for close consideration of economy, and we may believe ourselves indued with such self-control that we feel no fear that we shall be tempted to excess. But we ought not to forget that our working-class patients are very differently circumstanced: they cannot afford to waste money and it would be hard to find a poorer investment for their wages than spending them in drink. There is nothing more likely to draw a working man away from the practice of total abstinence than "doctor's orders" thoughtlessly given.

I shall make no apology for attempting to show that in taking the course which is manifestly to the advantage of the whole community we are also likely to benefit ourselves. The man who fails to do his duty because his interest is opposed to it is a rascal. But the best of men may find it easier to do his duty when he knows that material advantage to himself is likely to follow.

Of course, all this is dead against Dr. Reid's theories about alcohol and heredity. According to him the way to secure sobriety for the human race some thousands of years hence is to let alcohol have its own way for the present, and (with the aid of those beneficent eliminators of the unfit, poverty, and starvation, and tuberculosis, and crime) get rid of all who have "an inborn capacity for delighting in it." I do not suppose that most of my readers will feel that the necessary sacrifice of this delightful dream of the future is a fatal objection to my suggestions for present action. Some of us may venture to doubt whether Weissmann's facts are sufficient to support his own theory. But the inverted pyramid of inference which Dr. Reid has tried to balance upon Weissmann's dogma would topple over even if the foundation upon which he has rested it were firm as rock.

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DIET IN TYPHOID FEVER.

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THE plea for a less restricted diet in typhoid fever which was advanced by Dr. A. G. Barrs in the *British Medical Journal* for Jan. 16th, 1897, does not seem to have evoked that response to which it is probably entitled. Feeling with him that it is advisable to alter our rules in this respect, I have ventured to record the results obtained in 200 unselected cases of typhoid fever. Perhaps the word "unselected" is hardly quite correct, for, in order to be sure of the exact stage of the disease at which the various changes in diet were made I excluded all cases which had not been admitted during the acute febrile period. By this means also, the diagnosis has been verified clinically, and the possibility that the positive serum reaction was due to a recent attack of the disease has been negatived.

Before considering these cases it is interesting to inquire what has been the origin of the present accepted method of diet in typhoid fever. The history of medicine shows only too well how the profession as a whole can proceed along the wrong path, and I venture to affirm that with regard to this disease the method of diet is still in the stage of evolution and that simple and stereotyped as the present teaching is it will yet give way to a more rational and less restricted system. Until well into the present century fever, looked upon as an entity, was regarded as due to general or topical inflammation and its treatment consisted in a rigorous system of depletion, one of the factors in the depletion being low diet or even total abstinence from food. The first advance was made by Dr. Graves,[1] who wrote: "I am convinced that the starving system has in many instances been carried to a dangerous excess and that many persons have fallen victims to prolonged abstinence in fever." Though proud of his innovation he further says that one must not fall into the opposite extreme of overloading the stomach, as under such circumstances "gastro-enteric irritation, tympanitis, inflammation and exasperated febrile action are the consequences." Not believing in the separate entity of typhoid fever no specific rules are obtained from Dr. Graves's teaching, but for fever in general it is found that he allowed well-boiled gruel, toasted bread, and then animal jelly or broth. He makes no mention, however, of the time for giving solid food, though he records instances where "an incautious indulgence in the use of animal food was followed by a fatal result," and where the partaking of beefsteak at an early period of convalescence from fever was followed almost immediately by a relapse and death from enteritis in 36 hours. A little later Trousseau[2] accepting Graves as his guide, gave definite rules for dieting this disease, and apparently instituted the present method, for, after inveighing against the previous system of starving, he says: "Care must be taken not to fall into the opposite extreme of those who are not afraid to give solid food at the beginning and during the course of continued fevers." He even says that it must be given "always in small quantity and in the liquid form," and insists, at the decline of the fever, on "the necessity of restricting the patients to light farinaceous food," giving as his reasons for this teaching the statement that the medical attendant thus avoids "bringing on attacks of indigestion, which, though they may not cause serious gastro-intestinal mischief or (as sometimes happens) fatal peritonitis, may nevertheless lead to relapse or may retard restoration to health." The first time-limit was apparently given by Murchison[3] who, though he allowed "milk, eggs, broths, jellies, bread and milk, custard, sago, &c.," during the acute stage, yet specified that during convalescence "notwithstanding the cravings of the patient's appetite, the diet must be restricted to such articles as milk, eggs, farinacea, custards, light puddings, &c. Meat ought not to be allowed for at least seven days after the cessation of pyrexia and before meat is given it is well to try for a day or two a piece of boiled sole, smelt, or whiting. It is perhaps well to observe in passing (1) that the above diet for the acute stage is more liberal than that which is usually allowed; (2) that it is too liberal for the severest cases, in which the patients can only be fed by pure fluids; and (3) that in a case of any severity, even by the graduated system which I have adopted, seven days may be too short a period in which to receive meat other than minced. The exact rules followed at present, and which it is unnecessary to mention, seem to have been evolved shortly after the appearance of Dr. Murchison's work. They are given in detail by Dr. Fagge[4] and apparently repeated by subsequent writers.

It would thus seem, as Dr. Barrs has pointed out, that there are no exact observations to show that "solid food *per se* is bad and liquid food *per se* is good in febrile states," and though we are told that during fever the secretion of saliva and of gastric juice is diminished, yet illustrations as to the ability such patients show for digesting food make one agree with Stokes[5] that "no matter what Beaumont might say about the stomach not digesting when the patient had fever, in thousands of cases patients in fever digested remarkably well, required food, and derived benefit from it." Dr. Stokes gives an amusing incident where a lady caused much excitement amongst her medical attendants by partaking of salt beef and cabbage though in a febrile state, and concludes that "there can be little doubt that in many cases of advanced fever a greater latitude in the use of food might be adopted with advantage." The continuance of such a "restricted diet" in typhoid fever must therefore stand or fall upon the verification or refutation of the statements made since the time of Trousseau, that too early a recourse to solid food is likely to entail harmful consequences, for, if this were true, then all would admit that "it is absolutely necessary to resist their demands for food, when, as is usually the case, they have a craving appetite."

Before proceeding further, I think it advisable to give an idea of the method upon which these 200 patients were dieted. It will thus be possible to dispel the idea that by solid food is meant a liberal supply of beefsteak, &c., and it will further allow one to form an estimate theoretically of the chances of harm accruing from the changes proposed. In the first place, I wish to express myself as upholding the necessity for the retention of definite rules in the dieting of typhoid fever. As a matter of fact, the dietary for these 200 patients has been almost identical with that usually allowed, though it has been much altered in its application. Thus all patients have received milk only at first and have passed through the usual stages with greater or less rapidity according to their condition. The patient in a mild case without contra-indication would receive on successive days bread-and-milk with custard, fish with mashed potato, chicken, bread-and-butter, and, finally, minced meat, remaining at this stage until convalescence was well established; whereas in a severe case peptonised milk alone or with meat juice, &c., might have to be continued well into the "period of convalescence." Speaking broadly, the individual patient and his condition have been alone considered and slight exacerbations of temperature or occasional irregularities of the bowels have not *per se* caused the withdrawal of the food when no evidence existed of a distinct causal connexion. Practically I agree with Dr. Barrs that the patient's wishes constitute a most important help, and would add that his actions are an almost infallible guide. For a patient in the so-called "typhoid state" to ask for food is incredible, but even short of this condition so long as the tongue is dry no one would think of complying with a request for solid food if it were made. On the other hand, if a patient says that he is hungry or expresses a wish for an addition to his food and an examination reveals no reason to doubt the genuineness of his feelings a beginning would be made, though the exhibition of any whim or of early satiety and disinclination to eat with avidity that which was allowed (be it bread-and-milk or minced meat) would be taken as an indication that the request had been premature, and under such circumstances no increase in the diet would take place. It should be distinctly understood that on no occasion has solid food been forced upon a patient. As a rule, if they have not been the *vis a tergo*, they have at any rate accepted cheerfully what has been given, and never since the adoption of this system have I experienced the groaning and grumbling which used to be so marked a feature during early convalescence when their legitimate cravings were resisted. Taking now the evidence of my own 200 cases an

[1] Clinical Lectures on the Practice of Medicine, edited by Neligan.
[2] Lectures on Clinical Medicine.
[3] Murchison on the Continued Fevers.
[4] Principles and Practice of Medicine.
[5] Continued Fevers.

examination of them shows that in 100 cases fish[6] was allowed prior to the termination of defervescence; in 36 cases it was given on the day on which defervescence might be said to be complete, even though the temperature was not settled; whilst in 64 cases it was given subsequent to the completion of the defervescence. If, however, one takes the day on which, the evening temperature being normal, a period of 24 hours' normal temperature followed, then in 151 cases fish was given before that day, in 16 cases coincidently with it, and in 33 cases subsequently to it—viz., in 12 cases one day after, in three cases two days after, in 10 cases three days after, in five cases four days after, in two cases five days after, and in one case eight days after.

What evidence is there that evil effects have followed the change? The various injurious consequences of a too early administration of solid food which have been advanced are (1) diarrhœa, (2) hæmorrhage, (3) perforation, (4) pyrexia, and (5) relapse.

1. *Diarrhœa.*—If the etiology of diarrhœa is considered we find that it is probably proportionate to the severity of the attack (Louis), that it has not a necessary relation to the extent of the intestinal lesions (Fagge), that it is worse when the colon is ulcerated (Addison), and that it is due chiefly to the associated catarrh (Osler). Of these various factors the last only can be conceived as being capable of being affected by diet, and one would not expect to obtain other evidence of its production than the occurrence of vomiting, unusual abdominal fulness or uneasiness, or increased action of the bowels. Vomiting and increased abdominal discomfort have been marked only by their total absence, whilst, as regards diarrhœa, in 61 cases it was absent throughout; in 29 cases, though it was present at the time fish was given, there was no interference with its steady improvement; and in 107 cases in which it was present at some period of the attack, though not at the time when fish was given, there was not the slightest evidence of its recrudescence. There remain three cases only. In one of these cases an attack of diarrhœa had apparently just ceased when, fish being given, a return of loose motions occurred; in the second case increased action of the bowels seemed to follow and steadily get worse, but after a few days it became evident that one was dealing with a relapse; and in the third case the patient was at the time at the height of a moderately severe attack of the disease. The known variability of the symptoms, I think, allows of the conclusion that in these three instances the apparent connexion was a pure coincidence and it can therefore be said that careful dieting with solids at an early stage does not produce diarrhœa or give evidence of acting as an irritant to the intestinal mucous membrane.

2. *Hæmorrhage.*—This is more common in the severe cases, especially when there is much diarrhœa, and is due either to the separation of the sloughs or the presence of fungating sloughs, or to the associated hyperæmia. Its greater frequency, if there is a general tendency to hæmorrhage, or when there is a family predisposition to this particular complication, or, again, its relation to age, need not concern us. By direct irritation only could one imagine food to assist in the production or aggravation of the above factors, but this has already been shown not to have occurred. This conclusion is supported by an examination of the cases for hæmorrhage, since of the six patients in whom it was noted in four it occurred before any solid food had been given, whilst the other two had been taking solids from shortly after admission, yet hæmorrhage did not occur until the end of the third and fourth weeks and was, moreover, slight in each instance. It will be noted that the percentage of hæmorrhage—viz., 3 per cent.—is somewhat low and that in none of the cases was it fatal. This is what would be expected when it is remembered that the most copious hæmorrhages are met with chiefly in the worst attacks with much diarrhœa, and that in these cases an advance to solid food is not likely to have occurred.

3. *Perforation.*—The same considerations apply also to perforation, the one complication probably which has more than any other been responsible for the continuance of the present *régime*. In this series of 200 cases there is not a single case of perforation, yet this complication has been more than usually prevalent during the period of their collection. This one fact, that in not a single instance where perforation occurred had an advance to solid food been made, would tend to make one doubt the statement that "there is certainly no relationship between this accident and the severity of the disease."[7] Of the different etiological factors "the taking of indigestible food" may be dismissed at once from a consideration of the dietary I have mentioned, whilst of the other factors—meteorism, vomiting, and most important of all a direct extension of the necrotic process through the whole thickness of the intestinal wall—it is impossible to conceive of any connexion except by directly acting as an irritant, for I have already stated that on no occasion has there been the slightest evidence of abdominal fulness or of vomiting as a result of the alteration in the diet.

4. *Pyrexia.*—Perhaps the mildest accident which can happen, but the one which is supposed to occur most frequently, is the production of an exacerbation of pyrexia, the so-called febris carnis. Now in typhoid fever it is well recognised that the most surprising variations in temperature may occur, apparently without cause, in patients who have been kept on milk, and I would therefore submit that the exacerbation of temperature so often described as occurring shortly after the giving of solid food is probably in most instances a pure coincidence unless the change has been made too suddenly, and further that if the exacerbation is only temporary and unaccompanied by other symptoms one is not therefore justified in continuing the practice of starvation. I use the term "starvation" advisedly for, like Dr. Barrs, I was compelled to give solid food in the first instance to a patient whose temperature would not settle and who, despite the most liberal use of nourishing liquids—beef essences, eggs, &c.—continued to sink until in desperation I ordered solid food and this was followed by a speedy and steady improvement. Now, considering the 200 cases, in 180 cases there was not the faintest evidence of any alteration in the temperature, in 11 cases a temporary exacerbation occurred after, in two cases there was the appearance of an increase in the morning and evening oscillations, whilst the remaining seven cases were connected with relapses which I shall next consider. Such a record cannot, I think, be in favour of the prolonged continuation of fluid diet in all cases.

5. *Relapse.*—Relapse or recrudescence occurred in 48 of the 200 cases. Of these in 12 instances it was "intercurrent," in nine it was "spurious," and in the remaining 27 it was "true." As the percentage for relapse has been variously estimated from three to 18 the above number, giving 13·5 per cent., is by no means excessive. A more important consideration is the relationship which the occurrence of the relapse bears to the giving of solid food. In considering relapses I have included the "intercurrent" and the "true" and have discarded the "spurious," all of which were probably due to complications such as constipation, &c. Taking, then, the 12 "intercurrent" cases in 11 of them the relapse occurred before the food had been changed, and six of these were followed by a "true" relapse beginning at periods of six days, 10 days, 13 days, or more after the giving of solid food. In the remaining case the relapse was apparently coincident with the giving of fish. Of the 27 cases of "true" relapse the onset took place at periods varying from 0 to 20 days after the day on which solid food had been commenced. The relative numbers and days are shown by the following list. In three[8] cases the onset occurred on the same day, in one case it occurred one day after, in one case two days after, in two cases four days after, in two cases six days after, in three cases eight days after, and in 15 cases from nine to 20 days after. With such variability it is obviously unfair to ascribe the occurrence to the food, and one must perforce conclude that the single "intercurrent" relapse, and the three "true" relapses, whose onset was apparently coincident with the giving of fish, did not own this as their causal connexion. It is of course generally agreed that a relapse must be due to a re-infection of the blood, and further "since, if the patient happens to die a few days later, the intestinal lesions are found to be so far advanced that they clearly must have begun before the obvious relapse set in,"[9] one is justified in concluding that there is less possibility of causal connexion

[6] Though I am personally of opinion that the articles of diet which I have previously mentioned are quite interchangeable and that a beginning could be made with any one, yet in my own cases the order which I have given was observed and I have therefore chosen the day for fish as the day on which solid food was begun, not considering that boiled bread-and-milk, custard, and farinaceous puddings could be included in this category.

[7] Osler: Principles and Practice of Medicine.

[8] All three cases occurred immediately on defervescence from primary attack.

[9] Fagge: Principles and Practice of Medicine.

when the relapse immediately follows than when its onset is delayed one or two weeks.

We are still ignorant of the factors concerned in the production of this re-infection, but I think some peculiarity in the individual patient or in the micro-organism will yet be shown to play a prominent part, since there seems to be a great tendency in families to one type of attack, and the prevalence of different complications, including relapses, seems to vary considerably in successive epidemics.

I think that from a review of these 200 cases it must be concluded that a careful system of dieting, such as I have mentioned, has no injurious consequences and when one considers the benefits obtained—viz., more rapid recovery, diminished risk of surreptitious feeding with possibly harmful substances, lessened tendency to bolt food when allowed without proper mastication, and, finally, lessened tendency to asthenic complications as post-typhoid anæmia, gangrene, &c.—one must admit they there is no justification for resisting a craving appetite in the manner at present in vogue.

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A SIMPLE AND TRUSTWORTHY METHOD FOR THE QUANTITATIVE ESTIMATION OF MERCURY IN URINE.

BY DR. SCHUMACHER (II.),

AND

W. L. JUNG, D.PH.,

AACHEN (AIX-LA-CHAPELLE).

IN 1895 A. Jolles in Vienna published a memoir[1] entitled "A Simple and Delicate Method of Qualitative and Quantitative Estimation of Mercury in Urine." In the introduction Jolles gives an account of the methods hitherto proposed and adopted and comes to the conclusion that none of them fulfil the conditions which are essential in a practically useful analytical method—namely, the combined properties of simplicity and speed in working, with trustworthiness and accuracy in the results. Jolles then details a method for which he makes the claim that it combines these advantages. He recommends the use of metallic gold (which he obtains in granular form by an ingenious process) so as to form an amalgam with the mercury, when the latter is precipitated by the addition of stannous chloride. The use of the granular gold Jolles holds to be a great advance on former methods in which zinc, brass, wool, copper wire gauze, &c., were used. It readily takes up the mercury when this is precipitated by stannous chloride, and is then present in finely divided particles and in the "nascent" state. The whole operation according to Jolles takes at most 20 minutes.[2] In order to test these statements we prepared granular gold strictly according to the directions given by Jolles and with it made experiments, by his method, on mercurial solutions of different strengths. It was evident, however, that in no instance did complete amalgamation take place. As soon as the stannous chloride was added to the solution of bichloride of mercury, which was heated to 70° or 80° C., a more or less distinct clouding occurred, or a greyish precipitate of metallic mercury. The mixture was thoroughly stirred, shaken, and gently heated for a long time in order to bring the gold and mercury as much as possible into intimate contact, but in the end it always remained turbid, an evidence that the mercury had not been fully taken up by the gold. The mixture was allowed to settle and we tried to amalgamate with the granular gold the grey to black-coloured mercury which had all settled on the bottom. This only took place partly. A comparatively large quantity of free mercury always remained over.

We therefore consider it certain that it is impossible to effect a complete amalgamation of small quantities of mercury with gold in fluid media. Firstly, it was evident that the grey to black turbidity did not depend upon combinations with the tin; moreover, we took care that there was an excess of hydrochloric acid always present both in the clear, filtered solution of stannous chloride and in the mercurial solution. In many trials, which we varied in every possible way by the use of gold in smaller or larger granules, in the finest spongy form, and finally in "leaf" form, we obtained no better result. After our experiments we therefore cannot agree with Jolles's conclusions. L. Böhn[3] recommended another method of quantitatively estimating mercury in the urine which Rud. Winternitz published[4] and improved upon.[5] Winternitz obtained good results with his method, but it is hardly practical, both on account of the technical details in carrying it out and also on account of the length of time, from three to four days, which it requires. As our object was the estimation of the amount of mercury in the urine of syphilitic patients we needed a method which would combine the accuracy of Winternitz's method with the practicability and rapidity of that of Jolles. We therefore thought that we should attain our purpose if we could suitably combine the two methods mentioned. We then tried to obtain a complete union of the two metals by bringing the metallic gold for as long a time and as thoroughly as possible in contact with the solution containing the precipitated mercury. With this object in view we made a U tube of hard (potash) glass and partly filled it with the granular spongy gold. On one limb of the tube a bulb was blown to prevent small particles of gold from being carried over mechanically with the fluid. With the like object we placed two little glass rods in both limbs of the tube. We poured in corrosive sublimate solutions of different strengths, mixed with hydrochloric acid and stannous chloride. We tried it both warm and cold and poured it in both quickly and quite slowly, and even drop by drop, but we always found that the fluid which came through was more or less clouded with fine particles of precipitated mercury.

We arranged some quantitative analyses as follows. We weighed the carefully dried tube before running in a solution containing a known weight of mercury. After the solution had been slowly passed through we washed out the tube with water, alcohol, and ether, then dried and again weighed it. The difference of weights gave the weight of the metallic mercury which the gold had taken up. It was then again evident that a complete amalgamation of the two metals never took place as the weighings showed a loss of from 30 to 50 per cent. This method, then, as well as that of Jolles seems only useful for qualitative and not for quantitative analyses.

It may be mentioned that we used yet another form of gold, the so-called "true gold leaf," instead of the spongy granular gold of Jolles for filling the tube, but with this also we obtained no better result. It yet remained to prove that the turbidity of the fluid which came over was really due to mercury. We allowed the fluid to settle, and brought the grey to black deposit into prolonged contact with some granular gold, and then poured off the liquid. The gold amalgam was washed with water, alcohol, and ether, and then dried and heated in a test-tube with a small piece of iodine. A reddish-yellow ring of mercuric iodide was formed. We finally succeeded better when we combined R. Winternitz's method of amalgamation with mechanical filtration in the following manner. We prepared a small tube thus: a piece of hard glass tubing (Jena potash glass), with walls that were not too thick, was drawn out at one end in the flame of the blowpipe into a narrower part, and in this portion a thorough mixture of asbestos and "true gold leaf" was placed. We chose true gold leaf so as to get the gold in the finest possible state of division. The mixture was made by rubbing together pure white asbestos and pure gold leaf, washing out with hot hydrochloric acid, hot water, alcohol, and ether, and drying. In the lower portion of the wide part of the tube immediately above the narrow part we put a thick plug of asbestos to prevent any fragments of gold getting through and over it the layer of the mixture. The tube was then connected with a suction bottle, which was in turn connected with a water exhaust-pump. After these preparations, followed by a further thorough washing out with hydrochloric acid, water, alcohol, and ether successively, the apparatus was dried by gently heating with a small Bunsen flame and aspirating a constant stream of air dried by passage through concentrated sulphuric acid. The tube was weighed and the following three experiments were made.

[1] Monatshefte für Chemie, Band xvi., 1885, pp. 634–692.
[2] Op. cit., p. 693.
[3] Zeitschrift für Physiologische Chemie, Band xv., pp. 1–36.
[4] Archiv für Experimentelle Pathologie und Pharmakologie, 1889.
[5] Archiv für Dermatologie und Syphilis, 1889, pp. 783–828.

In the first experiment a solution of corrosive sublimate containing six milligrammes of mercury was poured into about 200 cubic centimetres of a heated mixture of distilled water, stannous chloride, and hydrochloric acid, and after allowing it to stand a little the resulting cloudy fluid was aspirated through the filter-tube. The filtrate was clear and remained so after 12 hours, with the exception of some little shreds of asbestos, which had escaped. The tube was carefully washed with warm water, alcohol, and ether, and with hydrochloric acid to get rid of the tin. By means of a suction pump a stream of dry air was drawn through for some time, and by very gentle warming the tube freed from all moisture. The weighing gave 5·2 milligrammes mercury instead of the six milligrammes which had been passed through. On heating the tube to redness a deposit of mercury formed in the narrow neck, which gave the typical reaction with the vapour of iodine. In order to test whether we could get a good result by simple filtration through asbestos we made an experiment in every way similar to the foregoing, but without using gold. We obtained only 3·4 milligrammes of mercury from the six milligrammes passed through. The loss was evidently due to the long continued passage through the tube of a stream of air heated gently in order to dry it. Some pieces of asbestos that were black to start with became obviously lighter in colour: thus a partial volatilisation of the mercury took place. An explanation of the ready volatility of the mercury in this experiment is that here the mercury existed as a free metal instead of being present when gold was used in the amalgam which the latter forms at once, and which requires a greater degree of heat to become decomposed, consequently the mercury present in the free uncombined condition in the asbestos filter is more easily volatilised at a proportionately lower temperature than the mercury contained in the gold amalgam.

The second experiment was conducted in the same way as the first, except that five milligrammes of mercury in about 300 cubic centimetres of water, hydrochloric acid, and stannous chloride were used in order to have a dilute solution. We found 4·3 milligrammes of mercury as the result of the weighings. Here also the slight loss was accounted for by the fact that some little pieces of asbestos were carried through. We therefore altered our procedure in the following manner. Instead of weighing the tube twice, once before filtering the mercurial solution and once with the mercury, so as to weigh the mercury directly, we calculated it indirectly from the loss of weight of the tube after heating it to redness. The tube was weighed after passing the mercurial solution and drying as before. It was then heated to redness and again weighed.

In the third experiment four milligrammes of mercury were dissolved in 500 cubic centimetres, thus making a very dilute solution. The quantity found by this method was 3·7 milligrammes of mercury. From this experiment our method seemed practical, but nevertheless a slight loss occurred in our process which would be of importance in working with still smaller quantities of mercury.

In order to remedy this defect we endeavoured to obtain the gold in yet finer sub-division than we had in the mixture of asbestos and gold leaf and we discovered an excellent material for our purpose in the hitherto unknown "gold asbest," in which the gold is deposited in molecular subdivision on fibres of asbestos. To prepare this substance we dissolved chemically pure gold in aqua regia, and heated it to drive off the chlorine and oxide of nitrogen and until the solution of gold chloride contained only very little free acid. In this solution we placed clean, fine, fibres of asbestos and allowed them to drain after they had been soaked through with the somewhat concentrated solution of gold. Then they were dried in a porcelain dish on the sand bath. The dish was gradually heated over the flame, whilst from above a stream of hydrogen (which had been purified by being passed through permanganate of potash and liquor potassæ and dried with sulphuric acid) was introduced by means of a porcelain tube. After about 15 minutes the reduction of the gold chloride was complete and the asbestos appeared partly coated with finely divided particles of glistening gold. It was cleaned with diluted hydrochloric acid and then dried.

The preparation of "gold-asbest" by means of the double chloride of gold and ammonium which we tried, both with and without the use of hydrogen, is not to be recommended. We now used the "gold asbest" prepared after our method for filling our filter amalgam tube. We finally found that the most practical way was to put a thick pad of asbestos in the narrowest part of the tube, over this a layer of "gold asbest," then a layer of granular spongy gold, and finally a second layer of "gold asbest." Experiments gave the following results.

—	Experiment I.	Experiment II.	Experiment III.
Decimilligrammes of mercury in the form of corrosive sublimate in each litre of water	40	30	20
Decimilligrammes of mercury found	41	30	20

We afterwards worked with still more dilute solutions :—

—	Experiment I.	Experiment II.
Decimilligrammes of mercury added to each one and a half litre of water	20	20
Decimilligrammes of mercury found	21·5	20

These experiments show distinctly the usefulness of our method for quantitatively estimating mercury in very weak watery solutions of corrosive sublimate. They should be carried out in the following way.

The dilute mercury solution should be heated on the water bath to about 70° C., then mixed with about 50 cubic centimetres freshly prepared, clear stannous chloride solution. After the solution has cooled a little it is aspirated through the filter amalgam tube already described, which is then washed with moderately warm diluted hydrochloric acid and afterwards three or four times with warm water. Finally, the water is got rid of with alcohol and ether, and the tube, after a slight warming at about 40° C., is dried by drawing a stream of dry air through it. The mercury forms a grey ring varying in tint from light to dark in the "gold asbest" layer in the tube. After drawing the air through for a quarter of an hour the tube is perfectly dry and is then weighed. Afterwards it is again connected with the stream of dry air and heated to redness in the Bunsen flame. After a little heating a precipitate of metallic mercury forms in the narrow part of the tube. The tube is left in the dry air apparatus until cold and then again weighed. The difference between the two weights gives the weight of mercury which was present in the solution filtered.

After obtaining such accurate results with watery solutions of corrosive sublimate by our method we did not hesitate to apply it to urine. Two milligrammes of mercury in the form of corrosive sublimate were mixed with a litre of normal urine free from mercury and the whole was warmed on the inverted condenser with hydrochloric acid and chlorate of potash till steam was given off in order to destroy the organic substances. The somewhat cooled urine was passed through a folded filter and stannous chloride and hydrochloric acid were added to the clear filtrate. From this point the working was exactly as described above. It appeared, however, that some organic substances which had not been destroyed were thrown down with the mercury in the asbestos. On ignition empyreumatic smelling gases escaped and the loss on heating showed 6 4 milligrammes instead of two miligrammes. We had then to devise some means of getting rid of the organic substances which remained after the first treatment with chlorate of potash and hydrochloric acid. We succeeded by repeated thorough treatment with chlorate of potash and hydrochloric acid, by which, it is true, some loss often occurred on account of the copious frothing. At times an almost explosive compound of the chlorate of potash and the organic substance was formed on warming.

Two experiments in which care was taken that there was no loss gave the following results: (1) 40 decimilligrammes of mercury were added to one litre of normal urine, and 36 decimilligrammes of mercury were found; and (2) 20 decimilligrammes of mercury were added to one litre of normal urine and 19 decimilligrammes of mercury were found. We now made extensive experiments with urine containing mercury from syphilitic patients, and finally employed our method, after many technical alterations and improvements, in the following way. One litre of urine in a two-litre retort flask of potash

glass was placed on the water bath and from 15 to 20 grammes of chlorate of potash were added together with about 100 cubic centimetres of strong hydrochloric acid. The mixture was warmed until the development of the chlorine was made apparent by the mixture becoming lighter in colour. It is advisable to attach a short inverted condenser. By the action of the nascent chlorine the organic constituents are for the most part destroyed and the mercury which is presumed to be in combination with them is changed into bichloride of mercury. The retort was then taken from the water bath and allowed to stand for 12 hours in order that the chlorine might act on the organic substances for a sufficiently long time. Afterwards it was again gently warmed and about 100 cubic centimetres of clear stannous chloride solution (prepared by warming excess of tin in concentrated hydrochloric acid and filtering through a hard filter) were added. After cooling a little it was filtered through an asbestos filter by means of the exhaust-pump and slightly washed. The asbestos filter was prepared from pure shredded asbestos on a porcelain filter which was placed in a moderately sized ordinary glass funnel. What adhered to the sides of the funnel was washed down with slightly warmed water from the wash-bottle, otherwise it adhered very firmly. The deposit, which along with the organic substances containing the mercury, together with a little hydrate of potash and some water, was placed in a retort holding about 300 cubic centimetres, into which it was entirely transferred by washing the funnel with warm liquor potassæ. The retort was placed in the water bath, slightly warmed, and allowed to cool. The organic substance was thus brought into solution and the action of the chlorine later was more thorough and took place quite quietly. Then (*after the cooling*) some crystals of chlorate of potash and concentrated hydrochloric acid were added. The chlorine formed destroyed the remainder of the organic substances entirely, and the mercury was all brought into solution as chloride. The solution was then filtered, best with the suction-pump (through a small filter plate on which there was a round close-fitting filter-paper, washed with as little water as possible). Afterwards the warm solution was mixed with from 10 to 20 cubic centimetres of stannous chloride and filtered through a filter amalgam tube filled with "gold asbest" and finely divided granular gold. The smallest particles of mercury were retained by this. The filter tube was then washed with diluted hydrochloric acid and water and afterwards three times with alcohol, then three times with ether, well dried in the dry air stream by which it was warmed a little at the start, and weighed till the weight was constant. Then the mercury was volatilised, the air current being again passed through. It had to be heated strongly as the "gold asbest" was a very bad conductor of heat, and the heating had to go on till the gold amalgam was thoroughly decomposed and the mercury entirely driven off. The tube was then weighed again till the weight was constant. The weight of the mercury contained in the sample of urine was the difference between the two weights. Three test experiments made by this method gave the following results:—

—	Experiment I.	Experiment II.	Experiment III.
Mercury (decimilligrammes) added to each litre of normal mercury-free urine	25	44	0
Mercury (decimilligrammes) found in urine	28	37	5

A series of three experiments was then made with pathological urine, each litre of which on an average of many analyses contained 20 decimilligrammes of mercury.

—	Experiment I.	Experiment II.	Experiment III.
Decimilligrammes of mercury added per litre	30	40·5	67
Decimilligrammes of mercury already present	20	20	20
Totals	50	60·5	87
Decimilligrammes of mercury found	60	55	77

We think that these figures sufficiently prove the usefulness of our method with respect to accuracy, and it can be carried out in a proportionately quick and easy way when once one has the apparatus for its performance, so that, with sufficient practice, three or four analyses can be made in 24 hours. Our method is very well suited to carrying out an extensive series of experiments which we have undertaken on the amount of mercury eliminated in the urine of persons who were undergoing a course of inunctions.

In conclusion we can confidently state that the method in the case of urine containing at least one milligramme of mercury per litre, by proper and careful work, according to our directions, gives absolutely accurate results. The results, as shown in the figures supplied, in cases where the urine contained less than one milligramme per litre, are only approximate. Our method has the advantage over that of Winternitz of being considerably quicker and easier in carrying out, and over the method of Jolles of being more certain and accurate with almost the same readiness and facility in working. The presence of an iodide does not interfere with the results obtained.

PROTRACTED GESTATION.

BY JOHN PHILLIPS, M.B., C.M., L.R.C.P. EDIN.

THE question of the duration of pregnancy being of considerable interest, not only from a medico-legal point of view, but also from that of general practice, I venture to report what I believe to be an authentic case in which it was prolonged to much beyond the usual period.

My patient was a primipara and unmarried. Intercourse was declared to have taken place on one occasion only—Sept. 6th, 1898—the girl's age at that time being only 16 years and four months. Her menstrual periods had occurred at regular intervals and they usually lasted about a week. Her last period had occurred in August, 1898, and had entirely ceased by the 24th of that month, this being the first day on which she considered herself "well," and it was from this date that I calculated the probable duration of pregnancy. In consequence of her missing her next two periods in September and October her aunt with whom she lived took her on Oct. 24th to a medical man in London, to whom the girl confessed, when questioned, that she had had intercourse, and he expressed the opinion that she was most probably pregnant. This proved to be the case and in April of the present year she came under my observation, and I was asked to attend her in her confinement, which I calculated would take place somewhere about May 29th, this being the usual average period of 278 days from the cessation of her last menstrual period (August 24th, 1898), from which I reckoned. Instead, however, of the confinement occurring at the expected time she not only went through the whole of June without a single pain, but labour did not set in until July 13th, on which date the pains began at 6 P.M.—*323 days after the cessation of her last period and 310 days after the date of coitus*, the child being born on the following day at 4 30 P.M. There is not the slightest doubt that no menstrual period occurred subsequently to that in August, as in addition to the girl's own statement her aunt, who always looked after her linen and who consequently always knew when her niece was unwell, declares that there "was not a stain" subsequently to the August period. During the entire pregnancy the girl had excellent health and there were no pains of any description prior to the onset of labour, which was perfectly normal and the presentation the usual cephalic one. Unfortunately at the time I had no opportunity of having the child (a female) weighed as it was sent away to be nursed almost immediately after its birth (within three hours), but although well proportioned and of good size it did not seem at all unusually large.

The late Dr. Matthews Duncan in his book, "Fecundity, Fertility, Sterility, and Allied Topics" (p. 348), is inclined to disbelieve in any case of supposed protracted gestation unless the size and weight of the child are above the average, considering that increased growth must follow lengthened gestation, but this cannot be taken as proved and, as Dr. Playfair points out, even if it be admitted the fœtus may have been originally small, so that at the end of the protracted gestation it may be of no more than the average weight and

there is certainly no reason to believe that the fœtus must necessarily be large simply because it has been retained longer than usual in the uterus.

This case, then, which lasted 323 days after the cessation of menstruation, is thus a parallel to the four instances reported by Simpson in which, reckoning from the same period, gestation was prolonged to 319, 324, 332, and 336 days respectively, and other instances as curious may be found scattered through obstetric literature. The case, however, becomes more exceptional and interesting when we consider the prolonged interval which elapsed between the date of actual intercourse and the onset of labour—310 days. Of the 46 cases reported by Dr. Matthews Duncan, who probably devoted more consideration to this subject than any other writer has done, he calculates an average interval between what he calls insemination (intercourse) and parturition of 275 days and other authors give other estimates—from 271 to 276 days. The longest of the series of cases recorded by Dr. James Reid in which he reckoned from a single coitus was 293 days and this he believed to be the extreme limit. Leishman, however, mentions one in which the interval was 295 days and Hedrich has recorded the case of a primipara who was delivered on the three hundred and ninth day after intercourse, whilst of those cases in which the duration of gestation has been determined by the death or departure of the husband Sir James Simpson reports one lasting 313 days and Dr. Hewitt another lasting 308 days. In more recent times Mr. Woollett reports[1] the case of a girl, 16 years of age, in whom gestation lasted 315 days from the date of coitus. In this case, however, labour pains occurred on the two hundred and eightieth day but passed off again, and another observer—Dr. R. McBride—has reported another case in which there was an interval of 298 days between a single intercourse and the occurrence of labour. It will thus be seen that the case of 310 days which I report is somewhat exceptional, and cases like these are of considerable importance from a medico-legal point of view.

In cases of contested legitimacy the English law and also the American, leaves the subject of the duration of pregnancy an open question, each case being decided on its individual merits, but in France and also in Austria a possible limit of 300 days is allowed, and this is extended to 302 days in Prussia.

There are still many practitioners who disbelieve in cases of prolonged gestation simply because they have not met with them in their own practice. There can, however, be little doubt not only that they occur, but that they probably do so with more frequency than is generally supposed.

Southsea.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

POISONING BY CORROSIVE SUBLIMATE IN A PREGNANT WOMAN; RECOVERY; DELIVERY OF TWINS AT TERM; POST-PARTUM HÆMORRHAGE.

BY M. D. EDER, M.R.C.S. ENG., L.R.C.P. LOND.

ON March 11th a primipara, over 30 years of age and six months pregnant, took by accident two grammes (30 grains) of corrosive sublimate in powder with a draught of water. I saw her some three hours later. There were great pain in the mouth, throat, and abdomen, persistent vomiting, and considerable collapse. The lips, mouth, tongue, and pharynx were much injured. The stomach-pump was not used, but large quantities of white of egg in water were given assiduously. A quarter of a grain of morphia was injected hypodermically and warmth was applied, and later hypodermic injections of ether were resorted to. The following day the vomiting had ceased, the fresh symptom being diarrhœa with bloody mucus. The same treatment was pursued and small quantities of milk and beef-tea were given at short intervals. As soon as the patient was out of danger antiseptic mouth-wash and gargles were used. In about a month the patient was able to take solid food. No œsophageal stricture had resulted.

On July 4th I received an urgent call to the same patient. She had been in labour since July 1st. There was general œdema of the legs, vulva, arms, and face so as to make her quite unrecognisable. I was told that she had been thus swollen for two months but had not sought medical aid. The waters had broken, but nobody knew when; the presentation was normal. With the aid of forceps a full-term male child was delivered. Abdominal palpation showed another child with normal presentation. After waiting half an hour, good labour pains having returned, I ruptured the membranes and in a few minutes a dead female child was born. The placenta came away almost immediately by itself. The uterus contracted well, the pulse remained bad, but I was obliged to leave for other work. Some two hours later I was recalled to find my patient in a critical condition from post-partum hæmorrhage, a furious hæmorrhage taking place when I arrived. The radial pulse was not to be felt. The hæmorrhage was controlled by bimanual compression of the uterus, or rather by the one hand inside the uterus. As soon as hot water was obtainable hot douches were given and $\frac{1}{100}$th of a grain of ergotinine citrate tabloid was administered hypodermically. The bleeding was controlled and a transfusion of some two quarts of saline solution was given. The patient rallied considerably after this and fortunately no further hæmorrhage occurred. Her condition was critical for some days, but eventually a good recovery was made. The œdema entirely disappeared before she was out of bed. My requests for a sample of the urine at the time and since then have not been complied with.

Palmira, Cauca, Republic of Colombia.

[1] Brit. Med. Jour., vol. ii., 1886.

A CASE OF ENORMOUS NASAL AND POST NASAL POLYPUS; PARALYSIS AND DEATH.

BY ATUL CHANDRA MUKHERJI, C.M.S.,
IN MEDICAL CHARGE, RAI DOORYA PROSAD GHOSE BAHADOOR' CHARITABLE DISPENSARY, SOLAGHUR (DACCA).

A MAHOMEDAN male, aged 20 years, was brought to me in May, 1896, with an enormous nasal polypus which, distending the upper part of the nose to such an extent as to produce amaurosis of the left eye (from pressure) and enlarging the nasal bridge to four inches in width when measured from eye to eye, passed down the left nostril and almost occluded his mouth—so much so that it was difficult to feed him even with a spoon. Finding all other measures fail I advised removal by operation at Dacca which he declined to submit to. I then suggested minor surgical intervention, but as the tumour was more or less cartilaginous and some portion of it might have intruded into the cranial cavity and implicated the anterior lobe of the brain I did not feel justified in operating, and the patient ultimately died, but a fortnight before he died complete paralysis, without coma or loss of intellect, supervened, and during the 11 days just preceding his demise he had incontinence of urine and fæces. No post-mortem examination was allowed.

BRISTOL DISPENSARY.—The annual report of the committee of this institution has just been issued and shows that during 1899 there were 10,835 patients treated who, with 1165 remaining at the end of 1898, made a total of 12,000. During 1893 there were 10,176 patients treated. The report adds that during the past year medical assistance has been given in 25 difficult midwifery cases and the three beds at the Bristol Convalescent Home are much appreciated by the patients.

NEW WORKHOUSE INFIRMARY AT LISKEARD.—At Liskeard on Dec. 30th, 1899, the new infirmary erected in connexion with the Liskeard Workhouse was formally opened by Mr. Preston Thomas, the Local Government Board Inspector. The building contains 60 "Lawson Tait" beds and has been erected at a cost of about £5500. Mr. Henry Chaplin, M.P., President of the Local Government Board, telegraphed "congratulating the guardians on the excellent work they have accomplished on behalf of the sick poor of their union."

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

A CASE OF CHRONIC MIDDLE-EAR SUPPURATION WITH THROMBOSIS OF THE LATERAL SINUS IN WHICH THE INTERNAL JUGULAR VEIN WAS NOT LIGATURED; RECOVERY.

(Under the care of Mr. ARTHUR H. CHEATLE.)

THROMBOSIS of the lateral sinus occurring during the course of otitis media may have either of two pathological causes. On the one hand, it may be due to the passage of micro-organisms from the middle-ear through the wall of the sinus; thus a thrombus is formed, which contains the bacteria which have given rise to it; this clot readily breaks down, and therefore in these cases there is a very great probability of the occurrence of embolic pyæmia. On the other hand, the blood may clot in the lateral sinus, owing merely to a "spread of the inflammation" from the surrounding structures; in this case the coagulation is probably the effect of the transudation of toxins, and the clot so formed is firm and has little or no tendency to become disintegrated. It is not possible to distinguish clinically between these two conditions until some infective manifestation occurs, such as a pyæmic embolus; but a rigor is very suggestive and is quite sufficient to justify ligature of the internal jugular vein. A case somewhat similar to the one recorded below has been published by Röpke.[1]

A boy, aged 14 years, attended at King's College Hospital on June 26th, 1899, complaining of pain round the left ear and of vomiting. 18 months previously he had had a discharge from both ears which "was stopped." On two occasions since then he had suffered from ear-ache, but there had not been any discharge. Five days before being seen at the hospital he had pain in his head and commenced to vomit. The pain, which was at first intermittent, had become continuous. The vomiting had caused great distress, and as no food could be retained he had rapidly lost flesh. Two days before admission the ear had discharged with some relief to the pain. Giddiness had been complained of for two days. A marked shivering fit occurred during the night before the visit to the hospital. The boy looked wasted and anxious and was extremely restless. He was sensible and answered questions readily. On walking he had a tendency to walk towards the right. The tongue was white, furred, and moist. The temperature was 100·2° F. and the pulse was 104. An offensive brown discharge came from both ears, a perforation being present in Shrapnell's membrane on each side. There was no bulging of the posterior superior deep meatal wall in the left ear, nor did the auricle stand out, and there was no redness or swelling behind it. Marked tenderness on pressure was present behind the mastoid process and below the ear where glandular enlargement could be felt. The heart and lungs were normal. Mr. Cargill reported that papillitis was present in both discs equally.

A few hours after admission the patient was placed under chloroform. The antrum was found to be full of granulations and cholesteatomata. On laying the antrum into the middle-ear the malleus and incus were found, both carious. The attic and middle-ear were then thoroughly cleared. On examining the walls of the antrum a discoloured and softened patch of bone was found in the posterior, leading directly to the lateral sinus. The sinus having been exposed for over an inch of its length it could be seen that it was occupied by a firm clot which was dark in colour except at the point of infection, where it was slightly yellow and evidently breaking down. As giddiness had been a marked symptom the cerebellum both in front of and behind the sinus was thoroughly explored but with no result. The dura mater, which had been incised, having been stitched up with catgut the sinus was laid open for the whole of its exposed length and the clot was turned out. As the clot for some distance above and below the point of infection was dark-coloured and firm it was decided not to tie the internal jugular vein but to clear the thrombus out as far as possible from the wound. For this purpose a sharp spoon was first carefully passed downwards, no bleeding occurring. A gauze plug having been prepared the spoon was passed backwards towards the torcular; after some clot had been gently removed a free gush of blood took place, shooting out a healthy-looking mass of clot fully one and a half inches in length. The bleeding was easily controlled by the plug. The whole wound was then packed with iodoformed cyanide gauze. The operation occupied one and a quarter hours. An hour after the operation a rigor occurred, the temperature reaching 102·4°. From that time the progress was steady and uneventful but slow. On July 10th, as the hospital was closing, the patient was transferred to St. George's Hospital under the care of Mr. Marmaduke Sheild, who kindly looked after him until he was sufficiently well to be moved to the convalescent home.

Remarks by Mr. CHEATLE.—That ligation of the internal jugular vein is not always necessary in thrombosis of the lateral sinus is well recognised, but no guiding rule has been laid down. Young[2] has described a case in which recovery took place without ligature of the vein, and no doubt many surgeons have had the same experience. Bronner has related a case in which the clot as seen through the wall of the sinus looked healthy throughout, and it was therefore left unopened with a happy result. It seems that if healthy-looking clot can be seen well below the breaking-down area ligation of the vein is not necessary; but in order that such a condition may be found it must be well recognised that *one* rigor demands instant operation. A rigor does not necessarily mean that there is septic thrombosis of the sinus, for in a case under the care of Dr. Urban Pritchard in King's College Hospital a severe rigor occurred as a result of an acute empyema of the antrum, and no further bad symptom followed after removal of the outer wall and evacuation of the pus. But it cannot be too strongly insisted upon that there should be no waiting after a rigor has occurred during the coming of an acute or chronic middle-ear suppuration; the antrum should be at once opened and the sinus examined. An interesting point about the case related is that although the boy was perfectly well the optic neuritis was present at least three months after the operation. The giddiness which was such a marked symptom was due in all probability to disturbance of the intracranial circulation owing to the occlusion of the sinus.

[1] Archives of Otology, vol. xxv., No. 4.

GUY'S HOSPITAL.

A SUCCESSFUL CASE OF REMOVAL OF A PACKING-NEEDLE FROM THE DESCENDING COLON; RAPID DISAPPEARANCE OF INTRA-PERITONEAL ADHESIONS.

(Under the care of Mr. N. DAVIES-COLLEY.)

BY means of the Roentgen rays much assistance can be obtained in the localisation of a metallic foreign body, but a single skiagram will in many cases not be sufficient to indicate the depth from the surface. A second skiagram taken in a different direction may supply the required information, but the best method is to employ Davidson's localiser, for by its use the exact position can be readily found. Occasionally no trace of a metallic body may be found on a photograph, although the body is certainly present, and a good instance of this was described in THE LANCET of Feb. 5th, 1898, when Mr. J. H. Morgan removed a piece of stay busk from the stomach of a man; no skiagraphic shadow of the piece of metal was found because it had been lying in a position perpendicular to the sensitive plate. The rapid disappearance of peritoneal adhesions which occurred in the following case is certainly remarkable.

A married woman, aged 36 years, the mother of nine children, the last of whom had been born 15 months, was on April 12th, 1899, admitted into Guy's Hospital under the care of Mr. Davies-Colley with obstinate constipation and a painful swelling above the front half of the left iliac crest. Her

[2] Glasgow Medical Journal, October, 1899.

bowels had always been troublesome and she had sometimes gone three weeks without any action. About seven months previously she had swallowed a packing-needle stated to be about four inches long. She did not suffer much afterwards, except that she had pain at first in the upper part of her chest and then in the right iliac region. Two months before admission she noticed the present swelling. Of late she had had increased constipation and there had been no action of the bowels for four days. She had also had severe paroxysms of pain in the left side of her abdomen which came on suddenly without any cause and lasted sometimes for an hour. They "doubled her up" so that she could neither stand nor sit. She had also for a fortnight been unable to walk, the left leg appearing to drag behind.

On admission the patient was seen to be a thin, pale woman with a tender, firm swelling above the front half of the iliac crest, two or three inches in diameter. The limits of the swelling were ill defined. There was no redness or œdema, and fluctuation could not be felt. The abdomen generally was little if at all distended. The rectum was ballooned. She suffered from severe attacks of pain in the swelling, which usually came on at night. It was difficult to examine the swelling properly because it was so tender, but from the firm resistance in the centre Mr. Davies-Colley concluded that one end of the needle was embedded in the parietes at this point. Under the x rays the needle was visible lying in a nearly vertical position, but its distance from the surface was not ascertained. On the 15th an anæsthetic was given and after feeling the hardness in the middle of the swelling Mr. Davies-Colley cut down through the muscles expecting to find the point of the needle. There was some fibrinous exudation upon the transversalis muscle. At this depth, however, he thought it best to stop his dissection as he could no longer feel the projection through the tissues. It seemed to him most probable that the needle had been pushed back into the intestine, and that if so there was a fair probability of its passage per anum. The incision was brought together with sutures, but some suppuration followed, and a granulating wound was left. On May 12th the patient had not passed the needle, and she still suffered from pain and tenderness about the wound. A good radiogram had been taken which showed that the needle lay vertically about half way between the middle line and the outline of the flank. Its lower extremity was reckoned to be two and a half inches from the surface, and its upper extremity a little further back.

Under an anæsthetic Mr. Davies-Colley first tried to feel the needle but could not. He then, having scraped the granulation from the unhealed wound, increased the size of the incision, and slowly dividing the tissues, freely opened the peritoneal cavity. He had to cut through two or three layers of fibrous tissue and hardly any muscle. The peritoneum was thicker than normal but nowhere adherent to the viscera. At the back of the abdominal cavity beneath the wound there could now be felt the point of the needle through the wall of the descending colon. In order to draw the colon well out of the wound the incision had to be enlarged considerably. The walls of the bowel were thick and its surface was somewhat rough. After making a small incision upon the point of the needle it was easily pushed out. Only a trace of fæcal matter came with it. Mr. Davies-Colley then cleaned the adjacent bowel and after drawing the edges of the incision together with two Lembert's sutures of fine silk, he returned it into the abdomen and sewed up the parietal incision. The wound healed rapidly and the patient went out well on June 7th. The needle was four inches long and more than one-eighth of an inch thick, and its point was rather blunt.

Remarks by Mr. DAVIES-COLLEY.—I have thought this case worthy of record, because it would seem that upon the admission of the woman the point of the needle had penetrated the wall of the colon and the deeper layers of the abdominal parietes. Presumably at that time the descending colon was adherent to the parietal peritoneum. Nearly a month afterwards, when I operated a second time, I found the deeper layers of the abdominal wall and the peritoneum thickened by fibrous tissue, but there was no trace of adhesions between the bowel and the parietal peritoneum except a little roughness in the wall of the colon and the thickening of the peritoneum. I think, therefore, that during the short period of four weeks the adhesions which previously existed must have been completely absorbed.

ROYAL HOSPITAL, HASLAR.

A CASE OF CEREBRAL HÆMORRHAGE PRESENTING SEVERAL UNUSUAL FEATURES; NECROPSY.

(Under the care of Fleet-Surgeon G. J. IRVINE.)

IT is difficult to account for the occurrence of a hæmorrhage in the following case, for all the usual causes appear to have been absent. The fact that coma did not supervene until nearly five days after the appearance of the hemiplegia is difficult of explanation. The case well deserves to be put on record. For the notes of the case we are indebted to Surgeon M. McDougall, R.N.

A stoker, aged 19 years, was admitted into the Royal Hospital, Haslar, on Oct. 6th, suffering from disease of the brain. The patient had always been considered healthy. On the 4th he went ashore and in the afternoon complained to his friends of a bad headache. In the evening he suddenly became paralysed on the right side of the body; he did not lose consciousness at all. On the next day he was seen by a medical man and was described as lying in a state of semi-consciousness all day. There was no history of injury. On the 6th—i.e., two days after the beginning of the illness—he was admitted into the hospital under the care of Fleet-Surgeon G. J. Irvine.

On admission the left arm, the left leg, and the lower part of the left side of the face were found to be completely paralysed. The patient was quite conscious. It was 30 seconds at least before he answered questions, his replies being perfectly rational. There was no aphasia. The knee-jerks, ankle clonus, and superficial reflexes were entirely absent on both sides of the body. There was complete hemianæsthesia of the left side of the trunk, the left limbs, and the left side of the neck. Sensation appeared to be increased on the right side. He lay listlessly in bed, his face being directed straight to his front. There was most marked deviation of the eyes to the right. His tongue was dry and covered with cracked brown fur. He was passing urine and fæces under him. The pulse was 100, of average volume and compressibility. The heart's impulse was in the fifth space in the nipple line; an extremely faint systolic bruit was heard at the apex. The respiration was slightly quickened, otherwise being in no way abnormal; the pupils were equal in size and slightly contracted; both reacted to light.

On Oct. 7th the patient passed a very restless night, not sleeping at all and continually pulling the bedclothes off. He complained of pain in the head, otherwise his condition was similar to that on admission. On the 9th he was less slow in answering questions. He had difficulty in swallowing, most of the milk escaping through his lips; there was no regurgitation through the nose; the pupils were much contracted, the breathing was shallow and 20 per minute, the pulse was fairly full at 90, and the temperature was 98° F. On the 10th the patient had a good night, sleeping peacefully all night long. In the morning his pulse was very feeble, 160 per minute. The entry of air into both lungs was very bad indeed. There were a few very fine râles over both pulmonary bases. He seemed to be a little brighter than previously and answered questions almost immediately in a listless sort of way. At midday the patient was much worse; great difficulty was experienced in getting him to swallow. He was quite conscious. The pulse was very rapid and the breathing was very shallow. At 4.30 he was unconscious. His pulse was uncountable and felt like a very rapid feeble flickering—it must have been considerably over 200 a minute. The breathing was very slow and gasping; there was no stertor. At 5 P.M. the patient died.

Necropsy.—A large oval clot, semi-organised, measuring two inches by one inch by one inch, was found in the right lateral ventricle. The veins over the hemispheres were much congested. There was a thin area one-third of an inch thick of yellow softening around the clot. No lesion of the arteries at the base or on or in the brain was discoverable. The heart weighed 19 ounces, the mitral valve admitting one finger but not two. There were no vegetations or roughening whatever on the mitral or other valves, the absence of which seemed to point to a congenital stenosis of the mitral valve. No aneurysm or sign of emboli was found.

Remarks by Surgeon MCDOUGALL.—The following points about the case are thought to be of interest: (1) severe

cerebral hæmorrhage in a patient aged 19 years; (2) the absence of any apparent cause for the hæmorrhage; (3) the absolute hemianæsthesia; (4) the condition of the heart; and (5) the absence of coma until the very end.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Ophthalmoplegia Externa complicating Graves's Disease.—Action of Tetanus Toxin on Nerve-cells of the Cerebral Cortex.

A MEETING of this society was held on Jan. 9th, Mr. THOMAS BRYANT, the President, being in the chair.

A paper was read for Dr. FRANCIS WARNER, who was unavoidably prevented from being present, on a case of Graves's Disease complicated by Ophthalmoplegia Externa. The patient was a sparely built woman, aged 43 years. Her symptoms commenced with diarrhœa in January, 1890, which lasted for nine months. About 1894 there were much weakness, tremor of the hands, prominence of the eyes, and a few months later goitre appeared. She then took thyroid extract tabloids and continued them for some time. In 1893 there was partial loss of power in walking, and the goitre appeared to have subsided about this time. When seen in January, 1899, there were some palpitation and occasional shortness of breath, but no goitre; weakness, tremor, and pains in the limbs were her principal complaints. The patient was not aware of the limitation of her eye movements. Both eyes were equally prominent. Von Graefe's sign was well marked and pupillary reactions were normal. The movements of the eyes were very limited, but not equally so in each eye nor in all directions. There was marked tremor but no incoördination. There were no indications of syphilis. No marked change occurred while she was under observation. Dr. Warner referred to a case which he had published in the Transactions of the Society, vol. lxvi., which was under his care in 1882, in which the same symptoms existed in a more marked degree after subsidence of the goitre, accompanied by paresis of the face and muscles of mastication, together with severe gastric crises and much mental disturbance. The patient died in St. Thomas's Hospital in 1884, and the sequel of her case was recorded by Dr. Bristowe in his "Diseases of the Nervous System," p. 69. No distinct brain lesion was found. Mr. Arthur Maude published nine cases of Graves's disease in St. Bartholomew's Hospital Reports, vol. xxvii., 1891, and one of these patients developed sudden left facial paralysis, and two days later ophthalmoplegia externa of the left eye. Cases of partial paralysis were recorded as occurring in Graves's disease by several authors in the Transactions of the Ophthalmological Society, 1886.—Mr. JAMES BERRY asked whether there was any evidence that the patient was hysterical. Some observers had associated ophthalmoplegia externa with hysteria. Indeed, Ballet, in an exhaustive monograph on the subject, had made three groups of cases: (1) ophthalmoplegia externa with Graves's disease; (2) ophthalmoplegia with hysteria, but without Graves's disease; and (3) ophthalmoplegia with both Graves's disease and hysteria. He was under the impression that "hysteria" played a very important part in both of these conditions. He was sorry that Dr. Warner had not raised any of the interesting questions relating to the pathology or treatment of Graves's disease. The theory of its sympathetic origin, though still held by some, was, he believed, entirely erroneous, and no progress would be made until this was put aside. It was this theory which had lead to the adoption of dividing the sympathetic for the cure of the disease, but the good results, if any, had been very dubious. One patient whom he (Mr. Berry) had seen died a few hours after operation with an extremely rapid pulse. Boisson had published 27 cases of operation on the sympathetic, but only 15 of these were typical cases of exophthalmic goitre and only two of them could be described as having undergone cure. Experiments on animals were very fallacious in this domain, and in man the relief obtained by division was at most only temporary, and the event very doubtful. One of the advocates of the operation had said that he would only advise it if the cornea were in danger of sloughing. But there was at least one case which had sloughed after the operation of dividing the sympathetic. Turning to the question of pathology of the exophthalmos there were still men who believed it to be due to dilatation of blood-vessels behind the globe. But if the vessels of the orbit were congested why were not those of the conjunctiva hyperæmic? Yet these vessels were not more vascular than normal. Cases in which there was known to be venous and arterial congestion of the orbit there was always hyperæmia of conjunctivæ. The enlargement of the thyroid gland was also said to be due to the same cause, but post-mortem examination showed no dilatation of vessels. These were not larger than in ordinary parenchymatous goitre. The operation of division of the sympathetic was based on erroneous theories and he was unable to support the practice.

Mr. ALEXANDER G. R. FOULERTON and Dr. H. CAMPBELL THOMSON communicated a paper giving the results of an Investigation into the Nature of the Changes produced in the Nerve Cells of the Cerebral Cortex by the Action of Tetanus Toxin. The experiments of Wasserman and Takaki were first referred to. These experiments had demonstrated the fact that nervous tissue possessed the property of being able to apparently neutralise the toxin of tetanus. Wasserman and Takaki, in explanation of their results, had adopted Ehrlich's theory as to the chemical interaction of toxin and antitoxin to form an inert substance, just as an acid and a base combine to form a neutral salt. And the cells of nervous tissue, being of all cells the most susceptible to the action of the toxin, were assumed to be the seat of the most active production of the specific antitoxin. Roux and Borrel, following up the same lines of investigation, had confirmed the results of Wasserman and Takaki, but had explained these results in a different way. Roux and Borrel believed that the apparent neutralisation of the tetanus toxin by nervous matter was not due to its chemical interaction with a specific antitoxin, but rather to an inhibition of it by the nervous tissue comparable with the special affinity for a stain displayed by a particular tissue element. On the whole, the balance of evidence appeared to be rather in favour of the view adopted by Roux and Borrel. The questions with which the present investigation was more particularly concerned were: (1) Was the functional disturbance in tetanus the result of, or accompanied by, structural alterations in the nerve-cells of such a nature that the change could be demonstrated by microscopic examination? and, that being so, (2) were such changes specific in their character? A number of experiments were carried out in which the cerebral cortex was examined after the inoculation of tetanus toxin in rabbits, guinea-pigs, and mice. The doses of tetanus toxin varied and the animals were killed at different periods of time after the inoculation. The brains were removed immediately after death and hardened in a formalin solution; the sections were stained by a modification of Nissl's process with methylene blue. In all the animals definite changes in the staining reaction of the motor cells were found. The earliest changes appeared to take place just outside the borders of the nucleus, which presented a granular speckled appearance, while the nucleus and nucleolus retained their normal appearance. There was usually also at this stage some pallor of the cell body close to where the axon arose. These central changes gradually progressed; the outline of the nucleus at first became blurred and indistinct, and finally was completely lost. The periphery of the cell body also underwent changes which were manifested by the appearance of a darkly stained edge which contrasted strongly with the pale central area. This deep staining at the periphery was a very constant condition and was generally in evidence as soon as there was definite pallor in the centre. The nucleus in this stage was often quite indefinable; the nucleolus remained well marked, though often irregular in outline; and the cell body was altogether swollen and altered in contour. While Mr. Foulerton and Dr. Thomson believed that this description gave a fair idea of the typical appearances according to the intensity of the change, there were certain variations met with which probably represented other stages of the same process. In some the early changes appeared to occur in the neighbourhood of the axon, and this area assumed a pale granular appearance, while the central part still remained normal. In others the deeply stained area which usually borders the cell body became of much wider extent, and the cell body appeared to be divided into two parts, one of which was pale and the other very dark. The changes were thus not absolutely constant in their character, but, as might be expected, appeared to vary somewhat with the amount of the initial dose of toxin and with

the length of the period of intoxication. The different appearances of the nerve-cells in these experiments were, however, believed to represent different phases of the same morbid process, subject to the influence of the two factors already mentioned. Sections of the motor area of the cerebral cortex showing these changes were demonstrated under the microscope. As the result of these experiments the following conclusions were formulated. (1) Certain definite histological changes were produced on the motor cells of the cerebral cortex by the action of tetanus toxin; (2) with efficient doses of the toxin such changes were of constant occurrence; and (3) whilst the occurrence of a change of some sort was constant the exact histological appearances produced varied with differences in the accompanying factors relating to time and dose. The investigation had been conducted more particularly with reference to the nerve-cells of the motor area of the cerebrum, but evidence had been obtained that similar histological changes occurred in cells of other portions of the cerebral cortex and also in the cerebellar cortex. It was at present impossible to say whether the changes described in tetanus were absolutely specific. But whilst definite nerve-cell changes had been found to occur after the inoculation of animals with other bacterial toxins, such changes were readily distinguished from those which were obtained with the tetanus toxin. The motor disturbance which occurred in tetanus appeared, then, to be the result of definite changes in the constitution of nerve-cells of the motor areas of the spinal cord and cerebral cortex; and the incubation period in tetanus must be regarded as the time which would necessarily elapse before sufficient toxin to produce, in the case of a motor nerve-cell, motor disturbance had been taken up from the circulating blood and fixed and accumulated in the cell substance.—Dr. FREDERICK E. BATTEN asked whether the temperature might have any effect in producing the changes described. Pyrexia produced changes in the cerebral cells which somewhat resembled those described by Mr. Foulerton and Dr. Thomson. Doubtless they had excluded that fallacy. Mr. Foulerton and Dr. Thomson had found these changes not only in the motor area and cerebellum but in other parts of the cortex. But in tetanus the intellect remained clear. How was this clinical fact to be explained? If the frontal region were affected they ought to get psychical effects. He had lately examined the brain and spinal cord of a child who had died from tetanus neonatorum, using the methods of Marchi and Niessl, as well as every other method employed by Mr. Foulerton and Dr. Thomson, but the results as regarded any changes in the cerebral cells were absolutely negative. The child seemed to be about to recover and it was not until three weeks from the onset of the disease that he died, so it might be said that he was on the road to recovery, but certainly there were none of the changes described. Dr. Batten found it somewhat difficult to differentiate these changes described by Mr. Foulerton and Dr. Thomson from those due to other toxins, such as glanders or pneumococcus. But he quite admitted that a very large experience was required for the adequate study of cerebral histology and the differentiation of changes due to pyrexia, tetanus, &c., and therefore such contributions as those before the meeting were extremely valuable.—Mr. FOULERTON, in reply, said that the temperature of the animals experimented on had been taken three times a day throughout, and in no case had it risen more than 1½° above normal at any time. In the rabbits the temperature had usually, and always for several hours before death, been normal. The possible fallacy of post-mortem changes had been very carefully excluded, for the brains, in 12 instances out of 14, had been taken out directly after the animal had been chloroformed and placed at once in the preservative. Mr. Foulerton and Dr. Thomson felt certain that these changes were not the same as those produced by pneumococcus, glanders, and the other infections tried.

MEDICAL SOCIETY OF LONDON.

Excision of the Vesicula Seminalis.—Operative Treatment of Uterine Fibroids.

A MEETING of this society was held on Jan. 8th, Dr. F. T. ROBERTS, the President, being in the chair.

Mr. C. MANSELL MOULLIN read a paper based on two cases in which he had Excised the Vesicula Seminalis. In both cases the operation was performed for tuberculous disease extending upwards from the epididymis. The patients were young adults. The testis, which had in each case been involved for some time, was removed through an inguinal or inguino-scrotal incision and the cord divided as high up as possible. The patient was then placed in the lithotomy position and the under surface of the prostate and the base of the bladder were exposed through a modification of Zuckerkandl's incision. The vesicula seminalis and the termination of the ejaculatory duct were then dissected out. In one instance a small intervening portion of the vas deferens was left behind. In the other, two ligatures were placed upon the cord in the groin, one upon the vas deferens by itself and the other upon all the other structures, and the whole of the remaining portion of the vas was extracted through the perineal opening. There was very little bleeding in either case. The wounds were packed with iodoform gauze and the external sphincter was sutured to the centrum tendineum. One healed up without inconvenience; in the other, in which the ejaculatory duct had been torn out from the urethra, a small urinary fistula persisted for some months, a few drops coming through on micturition. There was no fever in either and the action of the external sphincter was not impaired in any way. Mr. Moullin strongly advocated complete removal of the vesicula seminalis and vas deferens in every case of tuberculous disease of the epididymis in which the vesicula could be felt distinctly through the rectum, with the view of clearing out the whole disease and of giving the patient one more chance of recovery before the bladder became hopelessly involved, and probably saving him from a serious and otherwise ultimately fatal disease.—Mr. F. SWINFORD EDWARDS remarked on the novelty of the subject. He had not performed the operation, but he had seen one case operated on. It was done for tuberculous disease of the vesicula. The operation was not a simple one. It certainly required a good deal of time and probably entailed considerable hæmorrhage. It had occurred to him that the vesicula might be brought into view better by an operation of a modified kind resembling Kraske's operation for excision of the rectum. He would like to ask Mr. Moullin if he would recommend the procedure in cases of gonorrhœal vesiculitis? He had treated one such case satisfactorily by a kind of massage through the rectum. He would also like to ask what was likely to be the result of such operations. Would any variety of fistula be likely to be left? He congratulated Mr. Moullin on bringing the subject to the notice of the profession.—Mr. F. C. WALLIS thought that Mr. Moullin had not sufficiently alluded to the difficulties which attended such an operation. These were very considerable and a less experienced operator than Mr. Moullin would find himself in grave difficulties. He would be glad if Mr. Moullin would refer to this in his reply.—Mr. MANSELL MOULLIN, in reply, said that he did not think there were any very great difficulties provided the patient was placed in the lithotomy position with the buttocks well raised. It was surprising how well the structures came into view. In old men difficulties with the prostatic plexus might arise, but the hæmorrhage was not serious in younger subjects. The structures to divide were singularly few. Moreover, he had found that pressure, applied over the pubes above the symphysis in young subjects, especially those affected by tuberculous disease, could drive the base of the bladder and vesicula right down to the perineum. He referred to a case on which he had operated for gonorrhœal vesiculitis which had been under observation for 18 months. The operation was more difficult than those he had referred to in his paper because of the adhesions. The patient had been variously treated before without success, but this treatment of removal was efficacious. He very much doubted whether the structures could be more completely exposed by a modified Kraske's operation and this would involve a more severe degree of shock and a much longer operation. He thought the vesicula could be exposed better by a semilunar incision such as he had described.

Dr. W. J. GOW read a paper entitled Some Remarks on the Operative Treatment of Uterine Fibroids. The operation chiefly referred to was abdominal hysterectomy with intraperitoneal treatment of the stump, and the remarks were founded on 47 cases of this operation performed by him on cases of fibroid. The indications for the operation were, he said, closely bound up with the mortality from the operation. So long as this remained as high as 10 per cent., or even less, the operation must necessarily be restricted to cases where life was threatened. If the mortality were low it might fairly be advised in cases where the symptoms were sufficiently severe to cause invalidism.

Among the 47 cases recorded without selection by him of abdominal hysterectomy for fibroids where the stump was treated intra-peritoneally there was only one death, giving a total mortality of slightly over 2 per cent. The fatal case was due to secondary hæmorrhage occurring 38 hours after the operation. There were in the series 39 consecutive cases of recovery. He advised that after the uterine arteries had been tied, a precautionary ligature, including the outer fourth of the stump on either side, should be employed. By this means all oozing or spouting from the stump was checked. Such ligatures did no harm. The real essential to success was complete asepsis and complete control of bleeding vessels. He also urged the desirability of the simplification of abdominal operations. One assistant was all that was necessary and six sponges and six pairs of pressure forceps were usually amply sufficient. The fewer people engaged within the circle of the operation the better. He considered that it was most desirable to leave one or both ovaries, as in this way the climacteric changes took place slowly instead of suddenly. In four of his cases of hysterectomy a pyosalpinx was present on one or both sides, but no bad consequences followed. In only one of these cases was drainage employed. The presence of adhesions proved to be the most serious complication at the time of the operation, on account of the risk of hæmorrhage when they were torn through. He supported the view that of all the radical operations for fibroids abdominal hysterectomy with intra-peritoneal treatment of the stump was the best, and this operation might in the future be confidently expected to give a mortality of not more than 1 or 2 per cent.—Dr. GEORGE F. BLACKER congratulated Dr. Gow on his brilliant results—results which certainly had not been exceeded in this country, if indeed they had in any other. The question of operation on uterine fibroids had undergone very great alteration of late years, and if the mortality of abdominal hysterectomy could be reduced to that of ovariotomy, or lower, it would revolutionise their methods of treatment. The worst complication of the operation itself was undoubtedly the presence of adhesions. He referred to a case which had been admitted moribund. Abdominal hysterectomy was attempted but it was found to be impossible. At the necropsy they found a large fibroid with three-quarters of a pint of pus in its interior. The method of operating he had followed was that of Kelly. He preferred the intra-peritoneal method of dealing with the stump.—Mr. F. C. WALLIS remarked that he had helped Dr. Gow in many of his operations and he believed that the extreme simplicity of his methods constituted the chief source of his success. In some operations he had seen it was surprising what an immense number of instruments, assistants, sponges, &c., were employed. This greatly increased septic risks.—The PRESIDENT remarked on the extreme importance of adhesions in all operations of this kind.—Dr. GOW, in reply, said that undoubtedly adhesions constituted the chief source of danger at the operation as they gave rise to oozing. This led to operating against time, for nothing could be done until the uterine artery could be got at. He had a prejudice against packing the pelvis with gauze. Draining, though rarely necessary, became necessary under these circumstances, when adhesions were very plentiful. His main objects in bringing the subject forward had been to advocate the operation as a means of relief in bad cases of fibroid and to emphasise the intra-peritoneal method of dealing with the stump.

OBSTETRICAL SOCIETY OF LONDON.

Treatment of Rupture of the Uterus by Packing the Tear with Iodoform Gauze.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 3rd, Mr. ALBAN DORAN, the President, being in the chair.

Dr. HERBERT SPENCER read a paper on four cases of Rupture of the Uterus Successfully Treated by Packing the Tear per vaginam with Iodoform Gauze. They were the only cases in which he had adopted this method of treatment and the only cases which he had known recover. All the others (about eight in number) had died in a few hours from shock and hæmorrhage or in a few days from sepsis. Twice he had performed abdominal hysterectomy with a fatal result. After quoting some remarks which he made in the "Obstetrical Transactions" for 1897 upon the great danger of the operation of abdominal hysterectomy in patients suffering from shock consequent upon rupture of the uterus he expressed the belief that the mortality from rupture of the uterus might be lessened by the use of gauze packing. Having alluded to the advocacy of gauze packing by others he expressed his own views, for the purpose of discussion, as follows. In the treatment of rupture of the uterus—1. Abdominal section was rarely required and almost solely in cases where the fœtus had passed completely or in great part into the peritoneal cavity. It should be performed rapidly under local infiltration anæsthesia and should be followed by flushing of the peritoneal cavity with normal salt solution and by suture of the tear, if possible, or, if this be not possible, by packing the tear with iodoform gauze and draining by the vagina or abdomen. 2. Abdominal hysterectomy was hardly ever necessary; when the broad ligaments were so much damaged as to endanger the vitality of the uterus vaginal hysterectomy should be performed. 3. All incomplete tears implicating the broad ligament and most complete tears should be treated by packing the rupture per vaginam with iodoform gauze after removing clots and fluid blood.

Dr. PETER HORROCKS thought that a very strong distinction should be made between cases of laceration of the cervix and rupture of the body of the uterus. In two of Dr. Spencer's cases the laceration had not penetrated the peritoneal cavity. Such cases often did well without any gauze packing, and indeed without any treatment at all, and the chief point was to stop hæmorrhage and to see that everything was done aseptically. He had had several cases in which the peritoneal cavity had been opened by the rupture and the results had been highly satisfactory in recent years. He attributed this not alone to the packing by gauze but to the fact that the labours had been conducted aseptically. He gave details of a case in which the rent was sewn up, but the patient died in 48 hours. In another case he had put in two stitches so as to draw the gaping wound together somewhat and then he packed with sal-alembroth gauze, which was removed every 12 hours under chloroform for the first few days and once a day afterwards. The patient made an excellent recovery, but one of the stitches gave trouble and had to be removed nine months later; she had since had a living child, the labour having been brought about at the eighth month. He gave details of three other successful cases in which sal-alembroth gauze was used and tincture of iodine solution as a douche. In his opinion Dr. Spencer had left the gauze in too long and that the best treatment in cases which could not be treated in the way above-mentioned was to open the abdomen and to sew up the tear with sterilised silk. He gave details of a case in which this had been successfully done and the patient recovered, although the abdominal wound burst open and the bowels protruded on the tenth day. He saw no reason to change sal-alembroth gauze for iodoform gauze.

Dr. G. E. HERMAN said that the suture of a ruptured uterus was useless unless the edges of the wound were brought accurately together throughout its whole length; one or two sutures far apart were worse than useless. In cases in which complete suture of the wound could not be done he thought packing with iodoform gauze was the best practice. If the rent was so situated that packing with gauze was impracticable he thought that vaginal hysterectomy would give the patient the best chance.

Dr. A. H. N. LEWERS said he had had a case of rupture of the uterus at the London Hospital about 18 months ago in which iodoform gauze packing was adopted and the patient, though very ill for a week, recovered. Dr. Lewers believed that iodoform gauze varied a good deal in strength and except when the less highly iodoformed gauze was employed there was a good deal of danger of iodoform poisoning; he had of late used carbolic gauze in the peritoneum with satisfactory results.

Dr. DRUMMOND ROBINSON was much interested in the subject. He had had three cases of ruptured uterus under his care. In one case the patient died within a couple of hours from a complete rupture. The other two cases recovered. The first of these was an incomplete rupture into the left broad ligament; there was very little hæmorrhage at the time or afterwards. No drainage was employed and the patient recovered. The second successful case was that of a multipara, of about 40 years of age, delivered by forceps. The tear (a complete one through the cervix and lower segment anteriorly) was packed with cyanide gauze. The

patient was very ill for a fortnight but subsequently made a good recovery and had given birth to another child quite normally. A few days after the rupture a sinus developed at the umbilicus; this healed up in a few days.

The PRESIDENT said that absorption of iodoform caused rapid pulse, which was very confusing, as it might be taken as a symptom of sepsis. Many foreign authorities objected now to iodoform or any other chemical antiseptic agent in packing wounds. Did Dr. Spencer hold that the iodoform in gauze was an active antiseptic germicidal agent?

Dr. HERBERT SPENCER, in reply, said that two of his cases were complete ruptures and two were incomplete. The distinction between laceration of the cervix and rupture of the body of the uterus could not be sharply drawn; most cases of the latter did actually involve the cervix. Slight cases of laceration of the cervix up to, or even beyond, the vaginal insertion were of small importance; but where, as in his two cases, the cervix and lower segment were lacerated so extensively as to admit the half-hand into the broad ligament and there were much hæmorrhage and shock the danger was great; the extent of the laceration in the uterus was of less importance than the extent of the laceration of the vessels and tissue of the broad ligament; he had known death to occur where a cervical laceration was so short as not to involve either os. It was his experience and belief that these severe incomplete lacerations actually killed more women than the complete ones. He wished again to emphasise the great danger of abdominal section in rupture of the uterus and agreed with the remarks of Dr. Herman as to the uselessness of partial suture. He considered it undesirable to inject an irritant like iodine solution into the peritoneal cavity and dangerous to give chloroform and change the gauze every 12 hours. Iodoform gauze might be left in for six days or longer. The cases related by other speakers strengthened his belief in the value of gauze packing; though iodoform gauze was not free from risk he believed that in anæmic cases like those under discussion it was less dangerous than cyanide or carbolic gauze or even sterilised gauze which would not long remain aseptic in the vagina.

The following specimens were shown:—

Dr. T. W. EDEN: (1) Adenoma of the Uterus; and (2) Cast of the Uterus.

The PRESIDENT (for Dr. PAWLIK of Prague): (1) Photograph of Primary Cancer of the Fallopian Tube; and (2) Macerated Fœtus successfully removed from the Abdominal Cavity two months after Spurious Labour.

Mr. J. D. MALCOLM: Bilateral Pyosalpinx, Communicating.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Jan. 4th, Mr. H. E. JULER, the President, being in the chair.

The PRESIDENT showed a case of Orbital Exostosis. The patient, a young woman, had first come under observation in 1892, when there was a small, hard, nodular mass in the inner angle of the left orbit fixed to the nasal process of the superior maxillary bone. It had blocked the nasal duct, causing a mucocele, and the lower canaliculus was slit up. In 1894 the tumour seemed to be a little larger. No change seemed to have occurred since 1897; there was slight proptosis and the eyeball was displaced to the outer side, but there was no diplopia. Opinions were invited as to the desirability of removing the tumour.—Mr. E. W. ROUGHTON advised the removal of the tumour and thought that the best instrument for the purpose would be the surgical engine.

Mr. FRANCIS JAFFREY showed a case of Coccygeal Teratoma. It was that of a female child, aged six months, one of twins, who was admitted into the Belgrave Hospital for Children in September last with a large tumour in the coccygeal region, which was partly fluid and partly solid, and which at first sight appeared to be either a spina bifida or a dermoid, but on closer examination proved to be a case of teratoma. On examination the skin was found to be very thin in parts and on grasping the swelling a lobulated mass could be felt. The tumour had increased in size since the admission of the child into the hospital. It had been tapped twice and some fluid like turbid beer had been removed; this fluid was examined at the Clinical Research Association who reported that from chemical analysis it was quite evident that the fluid was not cerebro-spinal in origin. It contained none of the albumose characteristic of that fluid, nor, on the other hand, did it correspond to amniotic fluid. The cyst in question had probably arisen in the usual manner of congenital cysts in that region—viz., as representative of an attempt at another embryo.—Mr. RAYMOND JOHNSON did not regard the evidence that the tumour was a teratoma convincing. It was probably one of the more common multilocular cystic tumours occurring in this region. The tumour probably extended up between the sacrum and rectum and its removal would involve a more extensive operation than the child could at present stand.

Mr. HUBERT PHILLIPS showed a case of Deformity of the Left Arm in a youth, aged 17 years. There was considerable shortening of the humerus and what appeared to be the upper extremity of that bone was seen projecting on the inner side of the arm when the biceps was called into action. One extraordinary feature of the deformity was the fact that nothing abnormal was noticed by the parents or others until the patient fractured his right arm about nine years ago. With regard to treatment Mr. Phillips considered that surgical interference was not only not called for but that it would be absolutely injurious, as the arm was a most useful one in every way.—Mr. E. W. ROUGHTON and Mr. JACKSON CLARKE regarded the deformity as the result of a fracture of the upper part of the shaft of the humerus which had united at an acute angle.—Mr. PHILLIPS, in reply, agreed with this opinion.

Mr. JACKSON CLARKE showed a man, aged 37 years, who sustained a severe Compound Comminuted Fracture of Both Bones of the Left Leg in July last. A segment of the tibia measuring three inches in length had to be removed because it was quite separated from its periosteal connexions and was contaminated by dirt from the roadway. An incision was made over the lower part of the fibula and several fragments of this bone were removed in order that the two remaining segments of the tibia could be approximated and fixed by a suture of silver wire. The limb was treated by the open method and recovery was uninterrupted. A portion of the silver wire that had been exposed in the inner wound became gradually surrounded by callus. The patient had now a useful limb in which three inches of shortening was compensated for by a raised bpot. Three months after the accident Mr. Clarke allowed the patient to walk with the help of lateral supports of iron fitted into the boot below and extending to the knee above. Six months after the fracture a skiagram was taken and although abundant firm bony callus was present the skiagram showed no trace of it.—In reply to Mr. JAFFREY Mr. CLARKE said that he hoped to have skiagrams taken from this case from time to time in order to help to settle the point as to when the consolidating bony callus became recognisable. Mr. Clarke had no doubt that the union was bony and not fibrous; the appearance of mobility noticed by Mr. Raymond Johnson, he thought, was due to the proximity of the ankle-joint.

Dr. JAMES TAYLOR showed two cases illustrating the Results of Anti-syphilitic Treatment in Syphilitic Disease of the Brain. The first was that of a woman whom he had brought before the society 18 months previously and who at that time had right-sided hemiplegia following typical Jacksonian epilepsy. The patient had been treated with iodide of potassium and mercury with complete success. The second case was that of a man who was at first believed to be suffering from ordinary epilepsy. The attacks were, however, followed by left-sided hemiplegia, headache, and optic neuritis. Iodide of potassium was given internally and mercurial ointment used as an inunction. After a considerable time the fits ceased and the other symptoms improved, but recurred with cessation of the treatment. The latter was resumed and now the patient only presented a very slight degree of weakness, especially in the left leg, and occasional faint attacks.—The cases were discussed by the PRESIDENT, Mr. JACKSON CLARKE, Dr. L. G. GUTHRIE, and Dr. G. A. SUTHERLAND, and Dr. TAYLOR replied.

Dr. LEONARD GUTHRIE showed a case of Tabetic Ophthalmoplegia. The patient was a man, aged 65 years, who seven months previously had suddenly developed ptosis of the left eyelid with crossed diplopia and external strabismus. For 12 months he had suffered from weakness and unsteadiness of gait, giddiness, and tremors of the head and the right arm. Two years ago he had had some kind of a fit attended by momentary loss of consciousness, but no similar attack had occurred since. He had had a chancre followed

by non-suppurating bubo and severe sore-throat at the age of 24 years. He had been for six months under observation, during which time the ptosis had become less marked, but the left eyeball deviated outwards as before and could not be moved upwards or inwards beyond the mid-line. Quite recently the right eyeball also could not be moved inwards beyond the mid-line or upwards, but its movements outwards and downwards were unimpaired. The pupils were moderately contracted and reacted little, if at all, to light. Accommodation could not be tested owing to loss of convergence. The knee-jerks present six months ago had gradually disappeared. The patient's gait had become more ataxic and Romberg's symptom was now manifest. Sensation was unaffected except that the ulnar nerves behind the inner condyles were abnormally insensitive. He had some difficulty in holding his urine. There were no lightning pains. Dr. Guthrie considered that the diagnosis of tabes was now obvious, although six months previously the presence of tremors and the absence of any definite signs of the disease, including that of lightning pains, had created doubt as to the nature of the case. He drew attention to the frequent occurrence of paralysis of the ocular muscles as pre-ataxic symptoms. Such cases of ocular paralysis usually came under the notice of ophthalmic surgeons and were frequently cured, or the paralysis spontaneously subsided, perhaps years before other signs of tabes appeared.—The PRESIDENT and Dr. JAMES TAYLOR discussed the case and agreed upon the frequency of ocular paralysis in the early stages of tabes. Dr. Taylor had seen a number of such cases at the London Ophthalmic Hospital and had usually found the knee-jerk still present. The paralysis was usually transitory, but it might be permanent and was then probably due to nuclear changes.

Mr. E. W. ROUGHTON exhibited a case of Congenital Dislocation of the Hips. The patient, a man aged 20 years, showed the characteristic appearances of a bilateral dislocation.—Mr. JACKSON CLARKE remarked upon the favourable results which had been obtained in the treatment of this deformity in early life by Lorenz's bloodless method.—Dr. G. A. SUTHERLAND and Dr. J. TAYLOR also spoke and Mr. ROUGHTON replied.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.

The Open-air Treatment of Consumption.

AT the December meeting of this society, Dr. C. E. BEEVOR, the President, being in the chair, the following discussion on the Open-air Treatment of Consumption took place.

Dr. CLIFFORD BEALE opened the discussson, pointing out that while fresh air had from the earliest times been recognised as an essential to the successful treatment of tuberculous diseases it had of late become more evident that purity of air whether in open or enclosed spaces was the first consideration. The highest physiological perfection among human beings was to be found amongst peoples who lived in the purest air. Impurity might be organic or inorganic, but of these the organic contaminations were by far the most important as being direct feeders of the micro-organisms infesting the air passages. Inorganic contamination was for the most part injurious as the carrier of micro-organisms and of organic matters. The tuberculous patient suffered from the effects of the toxin produced in the formation of the tubercle and no remedy short of an antitoxin capable of annulling the effects of the poison within the body could be expected to have any curative effect. To prevent the entrance of the bacillus and to deprive it of the surroundings in which it flourishes must be the main aim of treatment. Air in enclosed spaces occupied by one or more animals, human or otherwise, must be more or less contaminated. Hence tuberculous patients should be kept away from crowded spaces and taught to regard such places as direct feeders of the disease. The living rooms must be kept free from stagnant air and should be well flushed with fresh air at all times when unoccupied. In the early stages the disease resembled a battle where bacillary attack had to be met by physiological defence and the defence was at first in superior strength. Opportunity had to be seized to assist that defence while it was still strong. Hence the vital importance of placing the patient under strict hygienic rules at the outset. Exercise, sleep, and food had all to be regulated and systematised and more attention was paid to such a system if it was written or printed in full for the patient's guidance. Medical supervision to see that the system was adhered to was an essential without which the formulation of rules was useless. Treatment was best carried out away from the home, but banishment to foreign surroundings was not essential. The length of time required was best left indefinite. It was always difficult to get the patient to see the necessity for making a sacrifice of time and money in the early stages when he did not feel really ill, but with the experience of recent times such a sacrifice should be urged in all really incipient cases.

Dr. F. R. WALTERS expressed his complete agreement with Dr. Clifford Beale's admirable summary of the principles of open air or hygienic treatment of consumptives. The following remarks would be limited to such treatment in sanatoria and similar institutions. The open-air treatment did not merely consist in exposure to fresh air while leaving the patient to his own devices, but was a combination of hygienic remedies requiring judgment and experience and calling for more or less continuous supervision by the resident medical officer. The treatment was educational and progressive—a species of training, mental and physical. The amount and nature of exercise must be determined partly by observation of actual results in each case; and the same with other hygienic remedies. Treatment in a sanatorium had the advantages common to all hospital treatment, viz., those which arose from coöperation and from the supervision of a number of more or less similar cases by one medical man in the same place, greater economy, and greater efficiency. The disadvantages were purely sentimental in any properly managed sanatorium. Although the locality was by no means a matter of indifference and most of our urban chest hospitals were ill suited for the open-air treatment, the Hampstead Chest Hospital was exceptionally favoured in its position, and the results there had been very satisfactory. The dense fogs did not usually reach the hospital and thin white fog was not found to do harm. The winter cold was no drawback, and night air was also found to be quite harmless. Some of their patients had slept out of doors continuously in a tent or on the balconies with distinct advantage. The arrangement of the wards in a double row was a drawback, as it was more difficult to ensure free ventilation from back to front. The new galleries would, however, be a great help. Prolonged treatment for 12 months or more was nearly always essential in dealing with poor people. As this long period could not usually be passed in the chest hospitals these should become affiliated with country sanatoria and the patients should be sent on as soon as they were able to travel. The true function of a chest hospital was to give "first aid" to the consumptive, the bulk of the treatment being carried out in a suitable country place.

Dr. EDWARD SQUIRE said that the "open-air treatment" of consumption was a development of the treatment of hygienic measures which tended to strengthen the resisting power of the tissues against the effects of the tubercle bacillus. It had long been recognised that attention to hygienic requirements was one of the best means of preventing tuberculosis in the individual, and the principle of the "hygienic treatment" might be expressed in the words which he quoted from a book which he published seven years ago:—"The hygienic rules so important as preventive measures are equally necessary conditions in the treatment of the disease." Of these requirements pure air was undoubtedly one of the most essential, but the food and clothing, the proper proportion of exercise and rest, and methodical regularity of life required careful attention. It was in special institutions such as hospitals and sanatoria that these requirements could be most completely provided, for in these the patient was subject to rules, and supervision ensured obedience to the regulations. But many cases could not, and some would not, enter an institution, and those who were admitted could not be kept indefinitely. Hygienic treatment at home, which was the special subject he had been asked to speak about, could be carried out with great advantage, although rarely with the completeness which was possible in a sanatorium. He had had most encouraging success with such treatment. Rules must be drawn up and written out or printed regulating the daily life of the patient, giving information about ventilating his rooms and the disposal of the sputa, stating the times and quantity of his meals, the times for rest and for exercise,

&c. To ensure the carrying out of details the personal supervision of the medical attendant was needed, and a nurse who had some experience of the treatment was valuable. It might be desirable for the patient to leave home and he had obtained good results by advising the patient to move from place to place "chasing the sunshine," staying a few weeks in one place and selecting suitable parts of the country. One disadvantage of home arose from the wish of the patient's family to spend some part of the day with him, for they sometimes found his rooms too freely ventilated for their liking and persuaded him to sit in a close atmosphere, perhaps in the evening, when all the family met in one room, with the gas lighted and the curtains drawn. Although it was only in the early cases that they might hope for a cure, advanced cases were the better for hygienic treatment, and not only was the patient's condition improved, but attention to hygiene diminished the risk to other members of the household. They might not be able to ensure perfect hygienic conditions in the home, but that was no reason for saying that the treatment was impossible at home. If they could not get all the hygienic requirements which they wished they should at least get for their patients as many as they could, and he had seen benefit result from even such a modified hygienic treatment as was possible amongst those who were not too well off and who could not leave London. Hygienic treatment did not absolutely replace drug treatment—drugs might be needed to assist appetite, to relieve cough, or to procure sleep. Finally, he would emphasise the necessity for early diagnosis, since cure was only possible in the early stage; when there was any suspicion of possible tuberculous mischief to examine the chest fully and methodically. Failure to detect early disease was, he believed, more often due to incomplete examination than to inability to appreciate the slight but distinct physical signs which indicated commencing tuberculosis in the lungs.

Dr. CHOWRY-MUTHU in the course of his remarks referred to the sanatorium treatment of phthisis as carried on at Ventnor. He said the open-air treatment was in the experimental stage in this country. Though beset with difficulties it could be successfully carried out in England. The secret of success in treatment depended upon thorough organisation, strict attention to each detail, the strong personality of the medical attendant, and his wisdom in distributing the different elements, as pure air, good food, exercise, rest, &c., according to the needs of the individual patient—in short, in directing and controlling the whole movement. He pointed out that the open-air life led by the ancient Greeks was one of the factors that contributed to their health and intellectual greatness. An indirect result of the agitation for fresh air in health as well as in disease would be the extension of the principles of the new treatment to every-day life. There would be larger and more commodious schools for children, better houses for the poor, wider streets, and more open spaces.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a pathological evening on Dec. 21st, the President, Dr. D. Burgess, being in the chair, the following microscopic and macroscopic specimens were exhibited and briefly discussed. Microscopical preparations: Dr. A. Anderson: Typhoid Bacilli in the Urine of a Typhoid Patient.—Dr. Arthur J. Hall: (1) Various Pathological Sections from Specimens sent to the Laboratory; and (2) Blood Films stained by Various Methods.—Dr. J. Robertson: Malaria Parasites in Different Forms of Malaria and in Mosquitoes.—Dr. G. Wilkinson: Sections and Culture Preparations of Malignant Pustule.—Macroscopical Specimens: Mr. C. Atkin: (1) Intussusception with Gangrenous Gut; (2) Relapsing Appendicitis (two specimens); (3) Epithelioma of the Tongue; and (4) Epithelioma of the Lip (two specimens).—Dr. Burgess: (1) Tuberculous Meningitis; (2) Tuberculous Tumour of the Pons; (3) Hydatid of the Lung; (4) Aneurysm Rupturing into the Trachea; (5) Typhoid Ulcers; and (6) Heart: Calcareous Coronaries.—Dr. W. T. Cocking: (1) Pulmonary Abscess; and (2) Unusual case of Fibrosis of the Pleuræ and Pericardium.—Mr. A. W. Cuff: (1) Bronchial Cast from case of Plastic Bronchitis; and (2) Tumour Cerebelli.—Mr. R. Favell: Carcinoma of the Cervix complicated by Pregnancy; Successful Hysterectomy.—Dr. Arthur Hall: (1) Ichthyosis Hystrix Linearis; (2) Lardaceous Kidney; (3) Lardaceous Spleen; (4) Secondary Carcinoma of the Lung and Diaphragm; (5) Specimens Illustrating Dissemination of Tubercle from Old Caseous Bronchial Glands; (6) Alimentary Canal from a case of Nitric Acid Poisoning; and (7) Various Specimens of Heart Disease.—Mr. Arthur Hallam: (1) Tuberculous Nephritis, Nephrectomy; (2) Epithelioma of the Tongue; (3) Relapsing Appendicitis (two specimens); and (4) Scirrhus of the Breast.—Mr. H. Lockwood: (1) Calculus formed round a Hairpin removed from a Female Bladder; and (2) Foot with Ulcerating Tophi requiring Amputation.—Mr. R. J. Pye-Smith: (1) Sarcoma of the Femur; (2) Fracture of the Radius; (3) Ruptured Appendix; (4) Epithelioma of the Penis (two specimens); (5) Dermoid Cyst of the Intestine; (6) Tubercle of the Larynx; and (7) Carcinoma of the Pancreas and the Liver.—Dr. Robertson: (1) Tuberculous Spleen (Pig); (2) Tuberculous Udder (Cow); and (3) Tuberculous Pericardium (Ox).—Dr. W. J. N. Vincent and Dr. R. W. Gilmour: (1) Tuberculous Tumour of the Pons; (2) Dura Mater from Pernicious Anæmia; and (3) Ulceration of the Aorta from a Needle in the Œsophagus.—Dr. Sinclair White: (1) Fibroma Uteri (two specimens); (2) Carcinoma Uteri (two specimens); (3) Scirrhus of the Breast (five specimens); (4) Carcinoma of the Intestine (two specimens); (5) Kidney (Pyelonephritis); (6) Ruptured Kidney, nephrectomy; (7) Sarcoma of the Kidney; and (8) Epithelioma of the Penis (two specimens).—Dr. G. Wilkinson: (1) Malignant Pustule; (2) Melanotic Sarcoma of the Skin; (3) Sarcoma of the Head of the Tibia; (4) Cystic Kidneys; (5) Old Blood Cyst Removed; and (6) Ovarian Cyst.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 5th, Dr. J. B. Ball, the President, being in the chair.—Mr. Percy Dunn in a feeling and appreciative speech proposed a vote of condolence and sympathy with the family of the late Sir James Paget, an honorary member of the society.—The proposal was seconded by Mr. Swinford Edwards and carried unanimously.—The Secretary read the report of the committee appointed at the ordinary meeting on Dec. 1st to organise a scheme for gratuitous attendance on distressed families of soldiers. The committee reported that 203 members of the society had written offering to coöperate in the scheme. Of these replies 44 were from consulting physicians and surgeons and from men practising in various special departments. The remaining 159 were from men in general practice.—Mr. L. A. Bidwell read a paper on Surgical Treatment of Dilated Stomach. The principal causes of dilated stomach were: (1) cicatricial contraction of the pylorus; (2) malignant disease; (3) adhesions outside the pylorus; (4) gastroptosis; (5) spasm of the pylorus; (6) floating kidney on the right side; and (7) atony. Only the first three of these various conditions were discussed at length by Mr. Bidwell. With regard to diagnosis, the following principal methods of examining the stomach were advocated: (1) inspection; (2) palpation; (3) percussion; (4) auscultation; (5) intubation; (6) artificial distension of the stomach with gas; and (7) chemical examination of the stomach contents. The indications for operation on the dilated stomach were: (1) pain usually localised to the pyloric region and felt in the back; (2) signs of dilatation of the stomach; (3) vomiting of solid food; (4) absence of free hydrochloric acid from the vomit; (5) some emaciation; and (6) obstinate constipation. The surgical procedures which were undertaken for the relief of dilated stomach were—for malignant diseases: (1) pylorectomy; and (2) gastro-enterostomy. In non-malignant stenosis: (1) pyloroplasty; (2) gastro-enterostomy; (3) Loreta's operation; (4) pylorectomy; and (5) division of the adhesions. In neurotic cases: (1) lavage; (2) massage; (3) gastropexy; and (4) an operation for diminishing the capacity of the stomach by folding in a portion of the redundant wall. The paper was illustrated by 16 cases operated on by Mr. Bidwell and arranged in tabular form. 11 were cases of malignant disease; five of these died within a fortnight, the remaining living some months. There were five cases of non-malignant stricture which were all cured by operation. Of the malignant cases seven were gastro-enterostomies with three deaths, three were pylorectomies with one death, and one was a case of pyloroplasty which proved fatal.—Remarks were made by the President, Mr. Swinford Edwards, Mr. C. B. Keetley, Mr. McAdam Eccles, and Mr. R. Bevan.—Mr. L. A. Bidwell briefly replied.

Reviews and Notices of Books.

System of Diseases of the Eye by American, British, Dutch, French, German, and Spanish Authors. Edited by WILLIAM F. NORRIS, A.M., M.D., and CHARLES A. OLIVER, A.M., M.D., of Philadelphia, Pa., U.S.A. Volume IV., Motor Apparatus, Cornea, Lens, Refraction, Medical Ophthalmology. With 51 Full-page Plates and 211 Text Illustrations. London and Philadelphia: J. B. Lippincott and Co. 1900. Pp. 949. Price 21*s.* net.

THE first section of the book is by Professor Edmund Landolt of Paris and deals with the Anomalies of the Motor Apparatus of the Eyes; it has been well translated by Dr. C. M. Culver of Albany, U.S.A. After some preliminary observations of a general character Dr. Landolt, who, it is well known, has long been engaged with the study of the ocular muscles, describes each in turn and shows by strongly marked black and red lines the relative position of the double images in paralysis of each muscle, which is a considerable help in effecting the diagnosis of these difficult cases. He gives a drawing of an instrument that he has devised, and to which he has given the name of "ophthalmotrope," by which the movements of the globe under the several muscles and the effects of their paralysis can be identified. Dr. Landolt gives a recommendation that will, as he says, avoid promenades with a lighted candle—namely, to leave the flame *in situ* and to change the position of the patient's head, so that to make him look upward his face is directed downward, in order to make him look downward his face is directed upward, and in order to cause him to look to the left his face is turned towards the right. He considers that there are three methods of measuring the amount of deviation or strabometry, first by means of the corneal reflex, secondly by means of tangents, and thirdly by means of prisms. In regard to the etiology of the paralysis of the ocular muscles Dr. Landolt omits the lesions of the nerves in their intra-cerebral course and of their nuclei because these are elsewhere fully described. He gives as the most common causes of paralysis pressure occasioned by hæmorrhage, by exudations accompanying meningitis, and by tumours. In addition he enumerates as occasional causes syphilis, rheumatism, inflammation of the cellular tissue of the orbit, and congenital defects. Lastly, he alludes to some exceptional and perhaps unique causes, such as cystic degeneration of the pineal gland, inflammation of the mucous membrane of the antrum of Highmore, dental caries, serous degeneration of the muscles in progressive anæmia, and to those obscure cases which occur after hysterical diphtheritic attacks, in poisoning by lead, after the use of diseased meat, from excess in tobacco and alcohol, and as an accompaniment of tabes dorsalis, cases of all of which conditions are to be found scattered in medical literature. Dr. Landolt discusses at considerable length the use of prisms as a means of correcting the distressing symptom of double vision. These, though theoretically very valuable, in practice are much limited in their application in consequence of their weight, when exceeding 3° for each eye. In the operative treatment he is a strong advocate for tenotomy of the muscle of one eye, conjoined with advancement of the opposite muscle in the other eye; thus, to take an extreme case, in total paralysis of the external rectus of the left eye, he would perform an energetic advancement with resection of the external rectus on the diseased eye and a simple advancement of the same muscle on the unaffected eye. If the effect is not then satisfactory the tenotomy of the internal rectus of the diseased eye would be added. For the determination of insufficiency of convergence and the degree of insufficiency Dr. Landolt has devised an instrument consisting essentially of a Herschel's double prism, two prisms of equal power being set in a frame which enables them to revolve, and either to neutralise or to double the effect of each. The angle of deviation produced is marked by a scale. The whole of this long section is worthy of study, written as it is by one whose knowledge and experience are exceptionally large.

The section of Diseases of the Cornea is written by Dr. J. P. Nuel of Liége and Dr. Thomas H. Fenton of Philadelphia. Affections of the cornea constitute about one-third of all ophthalmic diseases and as they frequently lead to impairment of vision are therefore amongst the most important of those diseases. The article opens with a quite original and very interesting description of the microscopical appearances following clean cuts of the cornea in the rabbit, commencing two hours after the lesion, and particularly interesting as showing the conditions that obtain at the close of the second day when a layer of epithelial cells continuous with those on the surface of the cornea lines the whole surface of the cut. The valuable investigations of Leber and Metchnikoff on the changes that occur as the result of the penetration of pathogenic microbes into the substance of the cornea, such, for example, as the production of œdema and of a zone of leucocytes to limit their action, the latter possibly possessing a dialytic substance to aid the action of the macrophagic cells, which constitutes so important a chapter in general pathology and the details of which are so clearly visible in the transparent tissue of the cornea,—are all very fully described.

In regard to the treatment of pannus it is a matter for regret that a page should have been wasted on the use of jequirity. It is just one of those remedies that is proposed as a novelty, is employed by a few surgeons, and failing or found actually to do harm quickly falls into desuetude. We doubt whether of the younger generation of ophthalmologists one in 20 has ever employed it, and there are very few amongst the older generation who would recommend it. There are good illustrations of hyaline degeneration (or colloid of the cornea) and of the appearances presented in the band-shaped affection of the cornea. No reference is made to the subject of transplantation of the cornea.

The chapter on Diseases of the Lens is written by one of the editors (Dr. William Norris) and, as might be expected, is very complete, especially in the part dealing with the pathology of cataract, which is illustrated by numerous drawings. Dr. Norris gives many illustrations representing different forms of cataract, some sufficiently common, others like the "axial cataract" of Bach—exceedingly rare—as well as a variety of forms of zonular cataract. Dr. Norris has worked through the literature of the subject with great care. Many instructive drawings are also given of the conditions left after extraction has been performed. The operative procedures for the removal of cataract are briefly but very sensibly described. He considers that the extraction should be accomplished through a wound situated near the periphery of the cornea of moderate size and without iridectomy, unless circumstances render it advisable. He applies a light bandage for a few days only and practises in every detail great gentleness and great cleanliness. He mentions, without approving of the proceedings, the application of sutures to the wound and the washing out of the anterior chamber. In the treatment of secondary cataract no reference is made to the glaucomatous conditions which are not unfrequently excited by this apparently trifling operation and which require prompt and energetic treatment, whilst the liability to their occurrence should have been dwelt upon if only to suggest caution to the young practitioner in the adoption of this proceeding. We have no space to do more than refer to the subsequent sections which deal with the Relations of Ophthalmic Diseases to the General Affections of the System, as with Lesions of the Circulatory System, by Dr. O. Haab of Zürich, translated by Dr. William Zentmayer of Philadelphia; with Organic Diseases of the Brain and Spinal

Cord, by Mr. Henry Swanzy of Dublin; with Disorders of the Secretory and Excretory Organs, by Mr. J. B. Lawford of London; with the Acute Infectious Diseases, by Mr. John B. Story of Dublin; with Dysentery, Cholera, and Continued Fevers, by Dr. J. Santos-Fernandez of Cuba, translated by Dr. Daniel Guitéras, United States Navy; with Hysteria, by Dr. M. Parinaud of Paris, translated by Dr. Casey Wood of Chicago; with Graves's Disease and Herpes Zoster, by Mr. Jonathan Hutchinson, jun., of London; and with Functional Neurosis, by Dr. Myles Standish of Boston. The last four articles in the volume are: the Toxic Amblyopias, by Dr. George Schweinitz of Philadelphia; the Entozoa of the Human Eye, by Dr. Maximilian Salzmann of Vienna, translated by Dr. H. V. Würdemann of Milwaukee, Wisconsin, U.S.A.; Simulated Blindness, by Dr. S. Baudry of Lille, translated by Dr. Frank Marlow of Syracuse, New York, U.S.A.; and lastly, the Ocular Signs of Death, by Dr. A. Gayet of Lyons, translated by Dr. Edward Ellett of Memphis, Tennessee, U.S.A. Each of these articles constitutes a kind of monograph on the subject under consideration. Thus, in Dr. Baudry's article on Simulated Blindness no less than 60 methods of discovering it are enumerated, many, of course, being only modifications of the method by prisms, but they throw an amusing sidelight on the frequency with which loss or impairment of vision is simulated in countries where conscription is enforced. The volume is extremely well edited and is, like each of its predecessors, a valuable addition to English ophthalmic literature.

The Hæmorrhages of Pregnancy, Parturition, and the Puerperium: the Treatment of Puerperal Eclampsia by Saline Infusions, with Notes of 17 Cases. By ROBERT JARDINE, M.D. Edin. Edinburgh: W. F. Clay. 1899. Pp. 76, with two Illustrations. 8vo. Price 1*s.* 6*d.*

THESE lectures upon Hæmorrhages were given by the author at the Glasgow Maternity Hospital, while that upon Eclampsia was read before the Edinburgh Obstetrical Society. Dr. Jardine has had some experience in dealing with cases of bleeding complicating pregnancy and also in treating cases of eclampsia, and his views are therefore of interest.

In the treatment of inevitable abortion he recommends emptying the uterus in all cases as soon as possible, and he thinks that chlorate of potash is a useful drug in the treatment of cases of habitual abortion. In the cases of accidental hæmorrhage in which he examined the placenta he invariably found it degenerated. We are not told, however, what kind of degeneration was present or whether the diagnosis was confirmed by the microscope. An interesting case of accidental hæmorrhage apparently due to the use of a Champetier de Ribes's bag is reported. The bag was introduced for the purpose of inducing labour in a case of contracted pelvis and burst before it was quite full. The patient became greatly collapsed, and as in withdrawing the bag a tremendous gush of blood followed the cervix was manually dilated and the child delivered. The cervix was badly torn during the delivery of the child and the patient died two and a half hours later. Dr. Jardine is inclined to blame the bag and he says that the case contradicts the statement that no bad effect has been produced by its use. A rubber bag such as was used in this case is in no sense of the word a Champetier de Ribes's bag, one of the most important properties of which is that it is covered with silk or some similar substance and is non-elastic. If badly-made rubber bags are used such unfortunate results will, no doubt, ensue, but if a proper Champetier de Ribes's bag be employed with due precautions no such accident as happened in this case is likely to occur. The method adopted at the Rotunda Hospital of plugging the vagina in cases of external accidental hæmorrhage with the membranes unruptured is not regarded as good treatment. In cases where interference is necessary the author advises dilatation of the cervical canal and delivery, due care being taken not to lacerate the cervix. In bad cases of concealed accidental hæmorrhage Dr. Jardine is inclined to try Porro's operation.

A table of 150 cases of placenta prævia is given. Of these 40 were complete and 110 partial—viz., lateral and marginal. Of the 40 complete seven died, or 17·5 per cent., while of the 110 partial 13 died, or 11·8 per cent. In the last 100 cases only six deaths occurred. Of 153 children 91 were born dead.

Where the cervix is undilated plugging the vagina is recommended, and where the cervical canal is sufficiently dilated to admit two fingers bipolar version. The author has plugged the uterus successfully in three cases of severe post-partum hæmorrhage, and he thinks this mode of treatment preferable to the use of perchloride of iron.

Full details are given in the last chapter of 17 cases of eclampsia treated by saline injections. In most of the cases equal parts of sodium chloride and bicarbonate of potassium were used of the strength of one drachm to the pint of water. In five of the later cases acetate of soda was substituted for the potash salt. Dr. Jardine employs intracellular injection and has had no trouble at the site of injection in some 50 cases. He has lost his faith in morphia and is inclined to attribute the fatal results in two of his cases to its use. In all the cases other means of treatment besides the saline injections were employed. Five of the 17 cases ended fatally, one dying from a ruptured duodenal ulcer. Marked diuresis was set up by the saline injections. The statement that the amount of urea and uric acid eliminated was markedly increased after the injections is hardly warranted in view of the small number of the cases in which a quantitative estimation was made and in the absence of all details as to what amount and what kind of nourishment the patients were taking.

Analytical Records
FROM
THE LANCET LABORATORY.

VARIOUS SELECTED WINES.

(INNES, SMITH, AND CO., 83, HIGH-STREET, BIRMINGHAM.)

THE following wines have been selected especially, we have been informed, for medicinal use. The samples included a variety ranging from champagne, port, and claret to Australian and Hungarian wines. The analyses of the various wines resulted as follows:—Champagne Jules Delporte, Bouzzy, Reims: extractives, 3·67 per cent.; mineral matter, 0·11 per cent.; alcohol, by weight 12·38 per cent., by volume 15·30 per cent., equal to proof spirit, 26·82 per cent.; sugar, 1·92 per cent.; tartaric acid, 0·60 per cent.; and acetic acid, 0·09 per cent. This is an agreeably effervescent wine of delicate vinous character and free from excess of sugar and acidity. Though "dry" it is of a pleasant fruity character. It retains its sparkling character satisfactorily. French Red Wine No. 1: extractives, 2·56 per cent.; mineral matter, 0·24 per cent.; alcohol, by weight 9·36 per cent., by volume 11·61 per cent., equal to proof spirit 20·35 per cent.; sugar, 0·09 per cent.; tartaric acid, 0·52 per cent.; and acetic acid, 0·15 per cent. This wine is practically free from sugar and is of light alcoholic strength. It was sound in condition and possessed a delicate bouquet and taste characteristic of the esteemed wines of the Medoc district. French Red Wine No. 2: extractives, 3·05 per cent.; mineral matter, 0·21 per cent.; alcohol, by weight 11·62 per cent., by volume 14·37 per cent., equal to proof spirit 25·18 per cent.; sugar, 0·15 per cent.; tartaric acid, 0·49 per cent.; and acetic acid, 0·12 per cent. This wine is somewhat fuller than the one just described and may be

regarded as of the Burgundy type. It possesses excellent bouquet and flavour. It is free from excessive acid taste and is "smooth" and "round" to the palate. It is well adapted for restorative purposes. Hungarian Red Wine: extractives, 2·34 per cent.; mineral matter, 0·24 per cent.; alcohol, by weight 8·29 per cent., by volume 10·30 per cent., equal to proof spirit 18·04 per cent.; sugar 0·23 per cent.; tartaric acid, 0·53 per cent.; and acetic acid, 0·14 per cent. This is a characteristic wine of a quite light alcoholic strength and of delicate flavour and aroma. It is a pure wine with no additions. Australian Red Wine: extractives, 3·52 per cent.; mineral matter, 0·32 per cent.; alcohol, by weight 13·15 per cent., by volume 16·24 per cent., equal to proof spirit, 28·46 per cent.; sugar, 0·32 per cent.; tartaric acid, 0·44 per cent.; and acetic acid, 0·24 per cent. This is a typically good Australian wine, fuller bodied and containing more alcohol than the French wines described above. It is a wholesome wine and from its robust character should be useful as a recuperative taken regularly in definite quantities. Moselle No. 6: extractives, 2·14 per cent.; mineral matter, 0·18 per cent.; alcohol, by weight 8·64 per cent., by volume 10·73 per cent., equal to proof spirit 18·81 per cent.; sugar, 0·25 per cent.; tartaric acid, 0·67 per cent.; and acetic acid, 0·07 per cent. This is a high-class wine, peculiarly delicate in character both as regards flavour and bouquet. Its freedom from volatile acidity is a satisfactory feature. It is an agreeable light wine, well adapted for dietetic purposes. Portuguese Red Wine: extractives, 9·20; mineral matter, 0·22 per cent.; alcohol, by weight 17·25 per cent., by volume 21·19 per cent., equal to proof spirit 37·13 per cent.; sugar, 7·56 per cent.; tartaric acid, 0·34 per cent; and acetic acid, 0·07 per cent. This is a wine presenting the analytical features of a good port from the Alto Douro. It is fruity in character and "clean" to the palate. It is smooth to the taste and free from harsh spirit. It is a good specimen of port wine and well suited as a restorative and stimulant in special instances. Our analyses and examination of these wines show that the selection is the result of good judgment.

LONDON STOUT.

(FINDLATER, MACKIE, TODD, AND CO., FINDLATER'S CORNER, LONDON-BRIDGE, S.E.)

The results of analysis of this stout were as follows: malt extractives, 7·10 per cent.; mineral matter (alkaline phosphates), 0·25 per cent.; alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent. The sample was ripe yet free from excess of acidity, and possessed a mild and soft flavour. It is an excellent type of this well-known nourishing malt liquor, having the advantage of a comparatively low alcoholic strength.

CHLORETONE.

(PARKE, DAVIS, AND CO., 21, NORTH AUDLEY-STREET, GROSVENOR SQUARE, LONDON, W.)

Chloretone is an interesting compound which is formed by the interaction of chloroform, acetone, and an alkali. It is a white crystalline compound having a camphor-like odour and taste, and may be melted and sublimed at the body temperature. The sublimate occurs in white glistening needles. It burns with a greenish flame and leaves no residue. On heating with sulphuric acid a smell like formaldehyde is evolved. A solution of chloretone rapidly reduces Fehling's solution. It is, however, only slightly soluble in cold water, but is very soluble in strong alcohol, and is permanent in dilute solutions of the acids and alkalies. Chloretone appears to be a hypnotic, an analgesic, and a sedative, and is administered in tablet form, the dose being from six to 18 grains. It may also be used as a local anæsthetic in minor surgery in the same way as cocaine by the infiltration method. It has been used further with satisfactory results as a general anæsthetic in experimental physiology and pharmacology. The claims made in favour of this new hypnotic, analgesic, and anæsthetic are important and merit attention. An account of its clinical use and results is published in the Journal of the American Medical Association of Sept. 23rd, 1899.

GLUTEN BREAD AND BISCUITS.

(BONTHRON AND CO., 50 AND 52, GLASSHOUSE-STREET, REGENT-STREET, LONDON, W.)

We have received no less than 19 specimens of gluten bread and biscuits illustrating the variety of foods made especially for the requirements of the diabetic patient by the above bread and biscuit makers. We have satisfied ourselves that one and all are either free from starch or else contain a minimum quantity. We welcome the attention which has been given to this subject by Messrs. Bonthron and Co., who as the result of their labours have been able to produce an astonishing variety of diabetic foods which, while suitable physiologically for the diabetic patient, leave little to be desired on the score of palatability. Amongst the articles examined were gluten bread, gluten comfits, gluten lunch biscuits, gluten rusks, dinner-cobs, coffee biscuits, gluten charcoal (adapted for fermentative dyspepsia), almond dessert biscuits, almond drops, and others. This selection gives the physician and the patient a wide variety of foods from which to choose, and the patient will be grateful to know that while adhering to definite diet he is not bound to keep to one kind of food of which sooner or later he becomes so tired.

NEW TABLOIDS AND SOLOIDS.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Amongst the recent tabloids added to an ever-expanding list may be mentioned the tabloid effervescent salicylic acid, containing three grains of the physiologically pure salicylic acid. The tabloid placed in water produces a briskly effervescing draught which renders the administration of salicylic acid agreeable. The specific action and uses of salicylic acid are well known in rheumatism and gout. Another interesting addition to the list of tabloids is the tabloid of potassium chloride, containing 20 grains of the salt, which is suggested for the use of gouty patients in lieu of common table salt. The potassium salts appear to offer an advantage over the sodium salts in administering to the saline treatment of gouty conditions. The tabloid admits of easily being crushed into powder at the table. We have also received specimens of the soloid potassium permanganate and alum, each soloid containing three grains of potassium permanganate and five grains of alum. The combination is a useful one, since alum preserves the permanganate in an active condition, while it acts also readily, of course, as an astringent. Under these circumstances the value of this soloid will be recognised.

OXYDOL.

(OXYDOL, LIMITED, 56, BERNERS-STREET, LONDON, W.)

According to our examination oxydol is a solution of peroxide of hydrogen which is remarkably permanent. As is well known ordinary solutions of peroxide of hydrogen soon diminish in strength until nothing but water remains. On the other hand, oxydol keeps for quite a long time, as our analyses have shown when directed upon specimens which we have kept in the laboratory some months. This is a distinct advantage since the powerful antiseptic properties of the preparation are due to peroxide of hydrogen. It has been shown that peroxide of hydrogen is useful in a wide number of applications, but chiefly as an antiseptic in contact with suppurating surfaces. The same agent has been used internally in typhoid fever, in dysentery, and in gastric disorders and infantile diarrhœa, its specific action being doubtless due to its antiseptic property or to its nascent oxygen. According to our analyses oxydol may be relied upon as a permanent and pure solution of hydrogen peroxide. The impurities found were less than 0·05 per cent. and may be referred to chlorides.

THE LANCET.

LONDON: SATURDAY, JANUARY 13, 1900.

THE recurrence of influenza in an epidemic form is a national evil of great importance. At any time such a disease constitutes a public inconvenience. Readers of Mr. DISRAELI'S letters written about the year 1837 will remember the frequency with which he alludes to the attacks of this indiscriminating foe as disabling first one distinguished person and then another. But at a crisis like the present, when every available man—and woman too—is wanted, when a strain is put on our resources of labour and skill, it is, to say the least, specially inconvenient. It is well that the public should realise this, as it rests with them largely to determine the limitations of the spread of the disease. They should realise that the medical profession is helpless in this respect. It can do much, very much, to mitigate the severity of the disease and of its principal symptoms, and not a little, if its authority be recognised, to avert its worst consequences. But to prevent its spread and its diffusion it can do little apart from the intelligent coöperation of the public.

The use of disinfectants in an amateurish and dilettante fashion is worse than useless, for it leads to a false sense of security and to the neglect of real measures of efficacy for restricting attack. The public must realise the fact that the disease is spread by persons having it, or who have recently had it, and possibly by articles that have been in contact with them in their sickness. The personal factor in the dissemination of the disease is the principal one. There is considerable doubt about the atmosphere, save that in the immediate environment of the patient, having any large share in the matter. There is much in the disease which makes it difficult for the public to act on this view. The sharp but short character of many of the cases, the absence of the requirement of notification by the State, the apparently quick return to comparative health after the short attacks, all tend to make the average patient ignore the fact that he is more or less an infected person—and he acts accordingly. He will go to his business, or his church, or his club, or his evening party—perhaps the most effective medium of all for the spread of such an infection—or hold his reception, as if nothing had happened; and, what is equally strange and true, his friends, in other respects intelligent, will go to his reception, or urge his return to business or his presence at a dance, as if he were a perfectly safe and sanitary person. Such recklessness arises from an inadequate conception of the part played by personal intercourse in the transmission of the disease. The ethics of infection are never very strong in the public mind. The selfishness of human nature is painfully assertive. As soon as the infectious patient feels within himself that his restoration to health is nigh, freedom of action is desired and no fine consideration of risk to others comes into play. If others for their part do not display selfishness enough to exclude him from their company that is their affair. This is true of far graver diseases than influenza, and of diseases the infectiousness of which has been known to all without doubt and for a very long time. But in the case of influenza the result of such carelessness is very widespread, for influenza attacks patients of all ages and, unlike most other infections, attacks them repeatedly.

We are witnessing this winter a most extensive epidemic of the disease. On the present occasion the proportion of deaths to the number of cases is not so great as in some former epidemics, but the disease has never been more typical in its manifestations—its rigors, sharp febricular pains, prostration, and depression. We do not propose in this article to go into any discussion of the scientific aspects of the disease and its treatment. Our object is to impress on our readers the advisability of making the public comprehend that it lies to a great extent in their own power to curtail the number of cases. If the sufferers are isolated, as they would be in the case of other infectious diseases, and if social intercourse is suspended till time and the proper means of disinfection have had a fair chance of rendering patients harmless to others the present rate of general infection will not be maintained. A little intelligence and common sense in individuals and households, and an early application to the medical practitioner for advice as to the prevention of fresh cases, may save many households from extreme inconvenience. It needs to be insisted on, when such heavy demands are being made on the nation at home and abroad, that to neglect proper precautions is unpatriotic as well as foolish.

IN THE LANCET of Dec. 2nd last we published a brief abstract of the important inaugural address recently delivered in London by the President of the Incorporated Society of Medical Officers of Health. Dr. NEWSHOLME, the well-known health officer of Brighton, very wisely availed himself of his accession to the presidential chair to discuss one of the most important topics which could engage the attention of a body of scientific men responsible for the safety of the public health. In his "Contribution to the Study of Epidemic Diarrhœa" Dr. NEWSHOLME has discussed a mass of information which will prove interesting and instructive to health officers everywhere, and we believe that the great labour which he has expended on the calculation and tabulation of the statistics of diarrhœa mortality, as well as in the arrangement of the numerous charts which illustrated his address, will be appreciated by the society over whose deliberations he has just been elected to preside.

In common with previous inquirers Dr. NEWSHOLME is perplexed by the absence of uniformity which characterises the nomenclature of the subject. What diseases are and what are not to be included under the head of diarrhœa is the question which demands an answer at the very outset. From the report of a special committee recently presented to the Incorporated Society of Medical Officers of Health we learn that "the classification of deaths from diarrhœa is at the present time in such a state of utter and hopeless confusion as to render the statistics of diarrhœa deaths, and consequently of zymotic death-rates, in different localities misleading and altogether useless for comparison."

This confusion would appear to be due partly to the employment by medical men of multiple names to designate the same disorder, and partly to their recently developed tendency to use the terms "enteritis" or "gastro-enteritis" in place of "diarrhœa" on the ground that the latter is the name of a symptom rather than of a disease. It is perhaps scarcely realised by certifying practitioners that by thus changing the name of a well-known disorder they are destroying the value of their certificate for the purposes of vital statistics and consequently of preventive medicine. In viewing the methods adopted at the General Register Office for ascertaining the diarrhœa mortality in the more important English towns Dr. NEWSHOLME offers some reasonable suggestions which are worthy of official notice; but he by no means fails to recognise the high value which in recent years has come to attach to the archives of Somerset House. "The returns of the Registrar-General," he says, "have been consistently compiled for a long series of years on a uniform system, and although this does not entirely eliminate errors caused by the carelessness or lack of intelligence of local registrars who contribute their returns to the central office, there can be little doubt that diarrhœal death-rates for the great towns, calculated from the Registrar-General's data, are fairly comparable in each year with one another. In this respect they differ widely from diarrhœal death-rates compiled by local medical officers of health without any exact rules to guide them." Dr. NEWSHOLME takes exception to certain of the rules laid down by the authorities at Somerset House for the guidance of local registrars in filling up returns. It would be difficult, he thinks, to justify the exclusion of deaths from enteritis, whilst admitting those from enteric catarrh as properly belonging to the diarrhœal class of disease. On this point we are unable to agree with Dr. NEWSHOLME. It occurs to us that whilst "enteric catarrh" is an indefinite and, as far as we know, unauthorised term, which finds no place in the official list of causes of death and may therefore be referred to diarrhœa without danger of confusion, "enteritis," on the contrary, is a well-defined disease, and is recognised as such by the Royal College of Physicians of London who include it in their nomenclature amongst diseases of the digestive system and thus eliminate it altogether from the zymotic group. To class as diarrhœal all deaths certified as from enteritis simply, without mention of its specific character, would, in our opinion, lead to hopeless confusion in the official returns of causes of death published by the General Register Office. Whatever be the explanation of the fact it is certain that the custom of medical practitioners in certifying deaths caused by diarrhœa has of late come to differ so widely that it is impossible for the health officer to ascertain even approximately the extent to which the disorder prevails in the district for which he is responsible. And this uncertainty will continue so long as medical men are without authoritative guidance concerning the names which should be used to distinguish this affection. We therefore regard as of hopeful omen the recent appeal of the Incorporated Society of Medical Officers of Health to the Royal College of Physicians of London for a definite judgment as to what names should be used and what names avoided by medical practitioners in certifying deaths due to epidemic diarrhœa.

Dr. NEWSHOLME, like many other experienced sanitarians, believes that increase of diarrhœa mortality is nearly related to what he calls "increasing urbanisation of the population"—that is, of course, to the overcrowding of dwellings on area, the pollution of air, soil, and water, and the various other evils which this condition implies. It i not surprising that London in the last two centuries should have suffered from diarrhœa so much more severely than it does now, for London was in those days far more urban than it is now. Its streets were narrower and there were more courts and alleys. The window-tax was in force, houses were full of effluvia from the "vaults" in the basement, and the whole soil of the city was full of organic impurities derived from both the living and the dead. "It is not difficult," remarks Dr. NEWSHOLME, "to work out points of resemblance between the state of matters in Old London and in some of our modern manufacturing towns." But it does not appear that mere density of population as such bears any constant ratio to diarrhœal mortality. The municipal borough of Brighton, for example, has a greater density than any of the other great English towns, with two exceptions, and yet there are 17 other English towns with a higher death-rate from diarrhœa. Upon one point, at any rate, experienced observers seem to be in substantial agreement, namely that epidemic diarrhœa, as a fatal disease, occurs among the labouring classes everywhere in excessive proportion. In England, by reason of our want of statistics concerning class-mortality, in which respect we are sadly behind Ireland, it is difficult to prove this, but the ordinary death returns of different parts of London, Manchester, and some other great towns clearly indicate that those districts whose social status is the lowest are the very districts which year after year experience the highest mortality from diarrhœa. After discussing the effect of high temperature combined with deficient rainfall on the prevalence of diarrhœa Dr. NEWSHOLME proceeds to summarise the results of his experience by expressing the belief that epidemic diarrhœa, like enteric fever, is a filth disease, although he recognises important points of contrast between the two diseases. He thinks that, apart from the fact that enteric fever is a disease more particularly of adults who are in the habit of taking infected food not eaten by infants, the clue to the difference of incidence of these diseases will be found in the view that the causation of diarrhœa is most closely associated with surface pollution of the *soil*, whilst enteric fever depends for its cause on less superficial pollution of the *subsoil* from leaky drains as well as from privy middens.

In treating of the etiology of epidemic diarrhœa Dr. NEWSHOLME naturally refers to the classical writings of Dr. BALLARD and especially to his preliminary report of 1888. It is to be regretted that the mass of information concerning this subject, which Dr. BALLARD collected and analysed with characteristic ability during the closing years of his life, should never have seen the light. We have it on reliable authority, however, that although Dr. BALLARD did not live to complete his final report the manuscript still exists in a forward state of preparation, and we believe that arrangements may even yet be made to preserve and publish it, if only a suitable editor could be

found who would devote the necessary time and attention to the task. We commend this matter to the consideration of the Medical Department of the Local Government Board, who are thoroughly conversant with the merits of Dr. BALLARD'S scientific work.

Finally, with regard to the immunity from diarrhœa commonly believed to be enjoyed by breast-fed children, Dr. NEWSHOLME expresses the belief, founded on local experience in Brighton, that such immunity is not so absolute as might have been expected—a fact which seems to emphasise the possibility of infection by dust, apart from food. And with respect to adult epidemic diarrhœa, which although it does not figure largely in our death returns is extremely prevalent in hot summers, Dr. NEWSHOLME thinks that much of it is similarly due to the infected dust of our city streets and alleys swallowed apart from food. Nor should the possibility of personal infection be ignored. Multiple cases in the same house he has found to be fairly common. Occasionally adults are infected by infants, sometimes the reverse. When we remember how common are secondary and tertiary cases of enteric fever in houses where unskilled nurses are employed to nurse the first patient, it is not surprising that the same should hold good for diarrhœa.

THE recent decision of the Queen's Bench Divisional Court in the case of LOGSDEN *v.* BOOTH brings within the Common Lodging Houses Acts the numerous shelters in London which since the decision of the case BOOTH *v.* FERRET have been exempt from the administration of the police and afterwards of the London County Council. This last decision is of so much importance to the sanitary administration of London and of many other communities that it deserves the attention of every person who interests himself in the welfare of the poorest class in our large cities. It was to the amelioration of the condition of this class that Lord SHAFTESBURY devoted his life, and it was due to him that the regulation of common lodging-houses has become one of the most important duties of municipal authorities. It is now nearly 50 years since the first Common Lodging Houses Act was passed and the conditions which existed before that time, and with which it was framed to deal, are personally known to but few of those who are alive at the present time. There are abundant records of these conditions, and the state of the numerous houses in which the poor and the vicious herded together without any control being exercised to prevent the grossest overcrowding or to to ensure any approximation to cleanliness should never be forgotten. The Act of 1851, however, began at once to put limitations upon these conditions, and Parliament was prepared within two years to amend a measure which was "the first successful effort that had been made to reach the very dregs of society—the first to penetrate to the deepest dens of vice, filth, and misery." The Common Lodging Houses Acts have worked well in England and have had a marked effect in raising the standard of the conditions under which the poor live. Philanthropic effort has, speaking generally, well supported the administration of the law, but philanthropic effort has in one respect struck the hardest blow against these Acts. It was argued that numerous persons existed who had not the threepence or fourpence available for the rent of a bed in a common lodging-house, that these persons had better be housed less satisfactorily than in a common lodging-house than not be housed at all, and hence have grown into existence the numerous shelters where for one penny or twopence the poor may lie down upon a mattress on the floor in close juxtaposition to each other, the ordinary requirements as to cubic space being disregarded.

We need not enter here into any discussion of the problem whether on the whole these agencies were not doing a useful work by their efforts to deal with the miserable beings who crowded into the shelters. The question which has to be considered is whether the standard of the accommodation which they provide is lower than ought to be permitted in any English community. Hitherto it has not been possible for any such standard to be fixed, for, owing to the decision of the Court of Appeal in the case of BOOTH *v.* FERRET, these shelters have not been deemed to be subject to the law relating to common lodging-houses. They were, indeed, exempted from such control by reason of their being conducted for the purposes of philanthropy and not for the purposes of profit. It is interesting to observe that when the late Lord Chief Justice gave this ruling the principal ground upon which he based his judgment was that, whereas it was necessary to protect the lodger from the desire of the keeper of the lodging-house for profit, no such protection was needed against the possible shortcomings of the philanthropist, who might be trusted to make such provision for his lodgers as was necessary without control by statute or regulation. Experience, however, has shown that "motive" is an insufficient safeguard and that the philanthropist, pressed as he no doubt is by the difficulties of finance, may take too low a view of the requirements of humanity. The decision in the case of LOGSDEN *v.* BOOTH reverses the previous decision. The present Lord Chief Justice, Mr. Justice BIGHAM, and Mr. Justice DARLING are unanimously of opinion that inasmuch as the Common Lodging Houses Acts are sanitary Acts, the fact that a house, used as a common lodging-house, is carried on for philanthropic purposes does not exempt it from the provisions of those Acts. Hence houses occupied by the poor, the rooms of which are used in common by persons strangers to each other, whether carried on for the purposes of philanthropy or of trade, must meet the requirements of the common lodging-house regulations.

This decision at once raises the question whether the standard required in common lodging-houses is to be retained or whether it is to be reduced to a level which in London would enable the small sum of twopence to provide all that is required by law. In other words, are the shelters to be improved to the level of the cheaper common lodging-houses or are the common lodging-houses to be allowed to sink to the position of shelters? This is a most important question. While undoubtedly the administration must not aim too high, the public have a right to demand that they shall be protected against the evils which may result to the community if the accommodation be of too inferior a character. The requirements of air-space and of cleanliness must be met. If these requirements be too much relaxed there will always be risk of disease, which has its

origin in overcrowding and dirt, occurring in the community. It will be interesting to observe how this problem will be solved, how the conflicting interests of finance and sanitation are to be reconciled. That there will be no hasty decision we are satisfied, for the subject must require study, but we have no reason to doubt that every effort will be made to ensure the existence of wholesome conditions in all shelters however small may be the fee the lodger pays.

IT is seldom that we have read a more interesting case as regards its clinical, pathological, and forensic features than that of Shaw and the Railway Passengers Assurance Company, which was recently submitted for decision to a tribunal of medical men, consisting of Dr. F. J. SMITH and Mr. A. J. PEPPER, representing as arbitrators respectively the claimant and the company, with Dr. MITCHELL BRUCE as umpire. For an account of the arbitration proceedings we are indebted to the *Buckingham Express* of Dec. 9th, 16th, and 23rd. JAMES SHAW, a butcher of Finmere, insured his life with the defendant company for £500. On Sept. 25th he was thrown from his cart, a wheel of which passed over his right loin. The injury he received was evidently severe, as he had to be conveyed home in a vehicle. No bones were broken, but there were symptoms of serious internal lesion from which, after a partial rally, he died in 10 weeks. He was 45 years of age and weighed between 15 and 16 stones. Both lay and professional witnesses deposed to his having enjoyed good health up to the date of his injury. He was seen by Dr. JOHN CHEESMAN shortly after the accident and was attended by him during his fatal illness. After 10 days he appeared somewhat better, but the improvement did not continue. On Oct. 19th he became rapidly worse. Dr. F. BUSZARD of Northampton, who was consulted, advised an incision to be made into a soft swelling in the pelvis, but only blood and blood-stained serum escaped. Eventually obstruction of the bowels supervened and death ensued a few days later. An inquest was held. Dr. CHEESMAN and his partner, Mr. F. DUKE, conducted the post-mortem examination. A soft mass weighing about a pound was found in the pelvis behind the peritoneum. This had no obvious attachment to the structures around, and was considered to be a blood-clot. Dr. CHEESMAN was of opinion that "the obstruction was due to a mass of blood coming from laceration of blood-vessels, caused by the accident." Mr. DUKE concluded that there had been "injury to vessels behind the kidney," and discovered "no evidence of disease anywhere."

After the inquest Mr. DUKE handed to Mr. G. H. DE'ATH, the company's local medical man, a portion of the "clot" which had been removed, and the latter gentleman gave it to Mr. WEBB, a chemist, who put it in spirit and addressed it to the Clinical Research Society of London. Mr. DE'ATH sent a telegram to Mr. J. H. TARGETT, intimating that something had been forwarded for his examination. Mr. TARGETT selected a portion of the mass and gave instructions to the assistant at the Clinical Research Laboratory to prepare a microscopical section. Only one slide was examined by Mr. TARGETT, who concluded that the substance was a sarcoma. Unfortunately the slide was not kept and the remainder of the alleged "clot" was thrown away, so that there was no chance of further investigation. Upon receipt of Mr. TARGETT'S report the insurance company very properly resisted the claim, on the ground that death was apparently due to disease and not to the injury. The policy of insurance contained what is termed an aggravation clause—i.e., a clause which held that the accident must be the proximate cause of death or that even though the accident might have accelerated death, if disease which of itself would prove fatal existed before the accident the company would not be liable. In the above case there could be no doubt that death was hastened by the accident. The arbitrators had to decide: (1) was the substance removed from the pelvis of the deceased man a blood-clot or a sarcoma? and (2) if a sarcoma did it exist prior to the accident? Dr. BUSZARD, Dr. CHEESMAN, and Mr. DUKE, the medical men who had personal knowledge of the clinical features of the case, and the two latter of whom conducted the necropsy, were firmly convinced that the mass was a blood-clot. In support of their opinion Dr. W. BULLOCH, lecturer on pathology and bacteriologist at the London Hospital, was heard. For the company Dr. WASHBOURN and Mr. PLIMMER (pathologist and bacteriologist at St. Mary's Hospital) appeared, and Mr. HERBERT PAGE and also Mr. TARGETT aided the arbitrators by their evidence.

To a non-professional person the headline in the *Buckingham Express*, "Doctors' Disagreement," would seem quite a rational presentment of the tale told by the experts on the two sides, but to a medical man and a pathologist who knows the difficulty of the subject—for medicine is not an exact science—the evidence as given on one side and the other would not appear, after all, to be utterly irreconcilable. We certainly should hesitate to affirm from the examination of one microscopical slide that a section is one of sarcomatous matter and not granulation tissue. On the assumption that the substance in the case under consideration was a sarcoma a question of vital importance to the issue at stake was, could the growth have attained the size it did in ten weeks?—i.e., could it have originated after Sept. 25th, when the man was thrown from the cart? A subsidiary question, but one of very considerable importance, also presented itself—can a sarcoma be started in a blood-clot, or in the inflammatory exudation following physical injury to the tissues? The fact that there was such divergence of opinion as to whether the mass was a clot or a new growth is sufficient warrant for the assumption of its rapid formation. We are acquainted with a case in which a recurrent sarcoma grew at the rate of more than an ounce a day, so that obviously it was possible for the mass, if a sarcoma, found by Dr. CHEESMAN and Mr. DUKE to have reached a pound in weight in ten weeks. Dr. DENNIS of New York has collected statistics which show how frequently an injury is the starting-point of a sarcomatous growth, and the conclusion is probably accepted by every medical man who has had an opportunity of studying the subject. On the whole, then, we feel justified in subscribing to the finding of the arbitration court, which was in favour of the executors of the deceased.

Annotations.

"Ne quid nimis."

MODERN BULLET-WOUNDS.

THE descriptions which have prevailed hitherto in works on surgery of the lesions inflicted by bullets must be completely rewritten. The remarkable changes of recent years in the diameter and velocity of rifle-bullets have been followed by changes equally remarkable in the wounds produced by them. A few weeks ago we described some very interesting experiments which had been performed to determine the comparative effects of modern bullets, and the results were of great value because the experiments were comparative. These experimental results had to be tried on the touchstone of actual experience, and a very interesting letter from Sir William Mac Cormac (which is published in this number of THE LANCET) shows that the practical results fall far short in severity of what might have been expected as a deduction from the experiments to which we have referred. Sir William Mac Cormac is particularly well qualified to express an opinion on the severity of bullet-wounds, for he had excellent opportunities of observing the lesions resulting from bullets during the Franco-Prussian War, and he tells us that in most cases the damage done by the modern bullet, especially by the Mauser, cannot be compared in severity with that inflicted by the needle-gun or the Chassepôt. The slight severity of the injury has struck him with amazement. The projectile bores a small clean hole right through the part and the aperture of exit can hardly, if at all, be distinguished from that of entrance. The wounds are on the whole aseptic and heal readily under a simple antiseptic dressing. So rapid is the healing in most cases that instances have already occurred of men who had recovered from one wound and been discharged being re-admitted later for a second bullet-wound. When only the soft parts of a limb are perforated and no important vessels have been torn the shock at the time of infliction of the injury is but slight and recovery is rapid and complete. Sir William Mac Cormac cites a case where a Mauser bullet traversed both thighs, passing in front of one femur and behind the other. There was very little hæmorrhage and the man was able to run another 200 yards after receiving this injury. Even when a bone has been hit the bullet may make a clean hole through it without any splintering, or with very little. This is naturally more common in the case of flat bones, such as the scapula, than in the long bones. It has also occurred in the case of the bones of the skull. In many cases even when important structures have been in the line of the bullet no harm seems to have resulted. In one instance a bullet entered on the right side of the neck immediately behind the sterno-mastoid and an inch above the clavicle, and its point of exit was in a similar position on the other side. Some difficulty in swallowing and speaking followed, but this passed off almost completely in a very short time. In another case the shot passed through the left ilium just below the crest and emerged a little more than an inch below the ensiform cartilage. From the situation of the apertures of entrance and exit, and remembering that a Mauser bullet passes straight from one to the other, turning neither to the right hand nor to the left, we are justified in thinking that the bullet must have pierced the stomach, but no symptoms of any such injury appeared. The patient took his food from the beginning without any inconvenience and had a rapid and uneventful convalescence. In yet another instance, from the situation of the wounds and from the fact that a most obstinate constipation followed the injury, it is almost certain that the colon was perforated, yet no peritonitis arose. Not the least remarkable of the effects of the Mauser bullet is the very slight hæmorrhage resulting from perforation of the lung. There is generally a little hæmoptysis which soon ceases and convalescence ensues. Even when a comminuted fracture of a bone of a limb has been produced complete consolidation of the broken bone may result, though the fracture was necessarily compound. A striking case of perforation of a joint shows that only a slight synovitis may follow. This is in marked contrast to the havoc produced by a large-bore bullet. These results must produce a feeling of hopefulness in the treatment of modern bullet-wounds, for they show that in many cases a temporary interference with military service is all that is produced. To Sir William Mac Cormac the profession owes a deep debt of gratitude for his graphic pictures written from the seat of war. While helping his country he is at the same time making a solid contribution to our scientific knowledge.

MALARIA AND MOSQUITOES.

WE would draw the attention of those of our readers who are interested in the investigations which have been carried on by various observers as to the relation alleged to exist between malaria and mosquitoes to a paper by Dr. G. Bastianelli and Dr. A. Bignami published in this issue. We owe the translation of this paper into English to Dr. G. Sandison Brock. An excellent *résumé* is given of the present state of the question, which will be understood not only by those who have followed the accounts which have appeared from time to time in medical literature of the researches which have been conducted in malarious districts, but also by those who are not acquainted with the work already accomplished. Due credit is given to other observers. The æstivo-autumnal parasites are first considered and a sketch is given of the two life-cycles which they present, one of which is completed entirely in man and is the cause of the fever, while the other is only initiated in man and is completed in mosquitoes of the genus anopheles. All three species of malarial parasite, distinguishable with certainty from each other, adopt as host the same species of mosquito, and the authors of the paper proceed to discuss whether the parasites preserve intact the distinguishing characters of their species. An affirmative answer is returned to this question, relying not merely on morphological data, but also on the results of experiment, and it is shown how even after their passage through the anopheles the species of malarial parasite remain distinct and do not become transformed one into another. Further, it is affirmed that a single infected mosquito is capable of inoculating malaria into man, and even more, namely, that a single mosquito by successive bites can infect several people. It sometimes happens that two species of parasite may develop in one and the same mosquito—for instance, an æstival and a tertian parasite—the two remaining distinct, so that it can well happen that a single anopheles may inoculate a mixed infection. The combination of the two fevers is by no means rare in Italy. The knowledge of these facts is of considerable practical importance. It has been suggested that much may be done to mitigate the prevalence of malaria in a district by destroying the breeding places of the anopheles, but the above facts indicate how thoroughly that would have to be done in order to make any appreciable effect in the occurrence of the disease. The concluding paragraphs of the paper are particularly worthy of attention, for they refer to the measures of prophylaxis which should be taken against infection. It is insisted that the careful treatment of the malarial patient constitutes one of the principal tasks of

social hygiene. The authors maintain that the energetic treatment with quinine from the commencement of the infection of the æstival fevers not only reduces the danger of relapses to a minimum, but has a great importance for general prophylaxis, since the parasites by its means can be prevented from developing into those forms which continue their life in the anopheles. The treatment of the malarial patient ought, therefore, to be carried out systematically and energetically in the same manner as is practised when countries are invaded by other epidemic and contagious diseases.

ACQUIRED COLOUR-BLINDNESS.

IN the December number of the *Scottish Medical and Surgical Journal* Dr. George Mackay and Dr. J. C. Dunlop of Edinburgh publish a full description of the cerebral lesions observed in an instance of complete acquired colour-blindness, achromatic vision being at the same time retained. They believe this to be the first complete case of the kind that has been submitted to post-mortem examination. Verrey[1] has recorded a comparable case of acquired one-sided colour-blindness (hemiachromatopsia) examined post mortem. The patient in the present instance was aged 62 years, was a man of great mental capacity, and his colour-sense had always been good. He took a great interest in his garden and was able to appreciate the most delicate colours in flowers. In 1896 his health began to fail and he became anæmic. An affection of the sight was first noticed on Nov. 24th, 1897. On the previous day his eyesight had been as usual, but on the morning of the 24th he found himself unable to read his letters, and when out walking later in the day he was unable to recognise vivid colours in some children's dresses. On Dec. 23rd, 1897, he was examined by Dr. Dunlop and found to be completely colour-blind. All coloured objects appeared to be grey. He could not tell by sight whether a fire in the grate of his room was glowing or not. His distant form sense, as tested by Snellen's types, seemed good. On Jan. 26th, 1898, notes of his condition were made to the effect that the external aspect of his eyes was natural, there were no obvious signs of blindness, he recognised faces, and walked about freely. The pupils were of medium size, equal, reacting to light and on convergence. The optic discs were slightly senile and anæmic, but not atrophic. The fundus generally was healthy; the refraction was emmetropic. V. = $\frac{6}{12}$ Sn. with each eye separately. The colour sense was completely suppressed for all colours all over the fields, every colour appearing to be grey. The patient's intellect was clear, he had no word blindness, his memory of colours seemed good, and he was quite conscious of his lost sense. The diagnosis was double homonymous hemianopsia, complete for colour sense, incomplete for form sense about the point of fixation, probably due to symmetrical cortical lesions in or near the calcarine fissures, with perhaps slightly more extensive destruction of the right cerebral visual area than of the left. During the two months following this examination he acquired greater facility in reading, but there was no restoration of his colour sense. On April 17th he suddenly developed a right-sided hemiplegia and on April 22nd he died. Six illustrations of the cerebral lesions accompany the memoir, and the description of them is too long for quotation in full, but is summed up as follows: An atrophy of the posterior part of the temporo-occipital convolution on both sides, that on the right side having caused a greater destruction of tissue than that of the left side, but the atrophy of the left side had extended rather deeper than that of the right, having reached the floor of the lateral ventricle and a small portion of the grey substance of the calcarine fissure. On both sides the lower edge of the optic radiation was affected. The nature of the atrophy was found to be due to a hyaline degeneration of the adventitia of the vessels which had to a great extent cut off the blood-supply and had led to complete destruction of the proper nerve elements, both fibres and cells, of the affected portions of the brain. Dr. Mackay and Dr. Dunlop remark that in this case the total loss of colour sense was associated with a bilateral lesion of the fusiform convolution so well defined and symmetrical that it becomes difficult to avoid the conclusion that the grey matter of that convolution is probably concerned in the perception of colours.

[1] Archives d'Ophthalmologie, xvii., 1888, p. 289.

THE ELECTRIC CURRENT AS A CAUSE OF FIRE.

WE commented upon this subject in THE LANCET of Dec. 23rd (p. 1753), since which time a great deal of correspondence has appeared in the *Times*, and we have ourselves received communications upon the subject from electrical experts. It will be remembered that the origin of the discussion was an outbreak of fire which occurred in a domestic dwelling through evident defects in the system of wiring. It would appear that considerable controversy amongst electrical engineers has been held for some years as to the best and safest means of "wiring" houses. There can be little doubt that the best method would be to enclose the "leads" in pipes and thus absolutely prevent leakage. We have received pamphlets written by Mr. F. Bathurst, A.I.E.E., in which this method is urged as economical, efficient, and safe. Common gas barrel seems suitable for the purpose, but it must be carefully lined with some insulating material. Probably this procedure would add much to the expense of installation, but in view of the increasing number of accidents it would seem that something better must be adopted than wooden cases. Besides, there is a tendency on the part of electric-supply companies to increase the voltage on the services. This fact adds a very strong argument in favour of enclosing electric wires in pipes.

THE LATE SIR JAMES PAGET

AS we announced in our issue of Jan. 6th, the first part of the burial service for the late Sir James Paget was said in Westminster Abbey on Jan. 4th. Her Majesty the Queen, who was represented by Captain Phillips, Gentleman Usher, and Dr. T. Barlow, physician to the Royal Household, sent a wreath to which was attached a card inscribed, "A token of respect and esteem. Victoria R.I." The pall-bearers were Lord Lister, representing the Royal Society; Sir Trevor Lawrence and Sir Thomas Smith, representing St. Bartholomew's Hospital; Dr. Pye-Smith, the Senior Censor, representing the Royal College of Physicians of London in the unavoidable absence through illness of the President, Dr. W. S. Church. The Royal College of Surgeons of England was represented by Mr. H. G. Howse, Vice-President, and Mr. T. Bryant. The President, Sir William Mac Cormac, was, of course, unable to be present owing to his being at the seat of war in South Africa. Dr. Ince, the Regius Professor of Divinity, represented the University of Oxford and Sir Michael Foster represented the University of Cambridge. The principal mourners were Sir James Paget's sons and daughters, his nurse (Miss Finn), and one or two others. Professor A. R. Simpson came from Edinburgh as representative of the University. Dr. M. Beverley and Mr. H. A. Ballance attended as representing the staff of the Norfolk and Norwich Hospital and Dr. W. A. Elliston of Ipswich, the President-elect, attended as representing the British Medical Association. The body was interred at Finchley

Cemetery, where Dr. Francis Paget, Dean of Christ Church, Oxford, said the committal portion of the office. A large number of medical and other scientific men were present in the Abbey. A funeral is always an impressive sight and perhaps never more so than in the case of a medical man who has all his life fought a foe to whom he knows that he must one day himself succumb. The Abbey Church of St. Peter at Westminster has seen the obsequies of many famous men, but among medical men of few greater than James Paget since the day when the remains of Hunter were translated from the vaults of St. Martin-in-the-Fields.

STREET NOISES.

THE Birmingham magistrates held a meeting on Jan. 3rd at which among other subjects the powers of the city to deal with the nuisance of yelling newsboys were considered. Sir James Sawyer considered that the nuisance called for repression. Mr. Barradale said that there was a by-law dealingwith the matter, but that it was recently held by the Court of Queen's Bench that somebody must support the police and show that some passer-by or inhabitant was annoyed. The Chief Constable said that he was quite aware of the nuisance and had issued special orders but that it was very hard to catch the boys. He considered that new legislation was required. Sir James Sawyer related how he had entrapped five boys in half an hour. Birmingham may safely be left to deal with her own nuisances, but we must say that we should like to see the London County Council or the new municipalities created by the London Government Act do something in the matter. The County Council seem to consider themselves powerless. If, however, they can, as they have done, enlist the services of the police to arrest or deal with citizens whose dogs are not properly labeled, they could also enlist the police to stop newsboys who yell.

BACTERIOLOGY OF TYPHUS FEVER.

IN THE LANCET of Feb. 11th, 1899 (page 390), it was mentioned that Dr. Andrew Balfour and Dr. Charles Porter of Edinburgh had found a diplococcus in the blood in 19 cases of typhus fever examined during life and in seven cases examined post mortem. Since that time these gentlemen have much extended their research, and the December number of the *Edinburgh Medical Journal* contains a long article giving the results obtained by them in 43 cases of the disease in question, both in the acute and convalescent stages, and in 12 cases post mortem. In 40 cases the blood was taken while the fever was acute, ranging from the second to the fifteenth day; three cases were examined only after convalescence was well advanced. In 36 out of the 43—i.e., in about 88 per cent.—a diplococcus was found 1 μ in breadth and about 2 μ long. It was non-capsulated, non-motile, and did not possess flagella. It had, however, a marked oscillatory movement and could frequently be seen turning over and over in its long axis both in ordinary and hanging-drop preparations. It stained well with carbol-fuchsin, gentian-violet, and retained the stain in Gram's method. In cultivation experiments it was found that no growth took place when the blood was transferred directly to solid media, even when the surface of the medium was moistened with bouillon. Broth became cloudy but tended to clear by deposit. The deposit was greyish-white in colour when unmixed with precipitated blood. There was no pellicle and no odour was detected. On agar the growth was rapid and copious and had the appearance of a white streak. There was no gas-formation in glucose jelly. Milk was coagulated in 48 hours. Litmus broth showed acid reaction within 24 hours. The most favourable temperature for the growth of the organism appeared to be 37° C. In stab cultures growth occurred as a continuous streak or as small dots, was confined to the line of inoculation, and liquefaction took place from above downwards. Strange to say, the same organism was found in 40 out of 46 cases of enteric fever which were examined. Of the 12 typhus fever cases examined post mortem all but one yielded a diplococcus which by plate cultivation was isolated in nine out of the 11 cases. Microscopically and in culture it seemed to be the same as that obtained in the living blood, the only difference being that its growth on agar-jelly, and potato was, except in one case, pigmented. The streak was white or faint cream at first, but in the course of a few days gradually assumed a distinct orange yellow. The growth on blood serum was always white. Eight rabbits were inoculated with cultures of the diplococcus obtained from the living blood; with seven of them very little effect was produced; the eighth became ill next day and was in a dying state on the thirty-first day, when it was killed and typical diplococci were discovered in cultures made from its blood. 11 inoculations of rabbits were made with the post-mortem diplococcus; three of these were intravenous and proved rapidly fatal; the typical diplococcus was obtained after death. Inoculation of three monkeys and two guinea-pigs gave negative results. A fourth monkey inoculated with a culture of the diplococcus obtained from a typhus fever patient post mortem was unwell for about a fortnight, after which it regained its normal appearance; typical diplococci were cultivated from its blood. A fifth monkey was inoculated with a culture of the post-mortem diplococcus and was slightly ill for about a week but gradually recovered. Its blood yielded a culture of the diplococcus, and it was remarkable that whereas an organism with a pigmented growth on agar was injected that which was recovered gave a white growth exactly resembling the culture of the diplococcus obtained from the living blood of the typhus patients. The organisms obtained post mortem from the typhus patients appeared to be almost identical with that derived from the living blood, the only difference between them being that while the latter is apparently non-pathogenic and non-pigmented the former is pigmented and is moreover pathogenic, at least to rabbits.

OBEY YOUR MEDICAL MAN.

THERE recently passed away at Bromsgrove Mr. Henry Swinson, M.R.C.S. Eng., in his hundredth year. Soon after qualifying (he became a Member of the Royal College of Surgeons of England in 1825) he had an attack of hæmoptysis, and his medical advisers warned him that only by complete rest and freedom from exertion could he manage to maintain his health. He followed this advice with marked success, led a regular, placid life, and took walking exercise every day. Up to the last few months he was accustomed to walk from his house into Bromsgrove and back, a distance in all of three miles, almost daily. We have cited the case of Mr. Swinson as an instance of the advantages to be gained in certain ways by strictly following out the advice of a medical attendant. On the other hand, patients who have been doomed by their advisers have not only falsified the prediction but have done useful and honourable work. In our own profession there is the leading case of the late Sir Andrew Clark, who was elected to the staff of the London Hospital in 1854 with the remark from the medical staff of "Let Clark have it; he is only a poor Scotsman and has not long to live." Yet Clark lived until 1893 and saw all his colleagues at the time of his election pre-decease him. In another field we may recall the instance of Dr. Martin Joseph Routh, who was President of Magdalen College, Oxford, for 63 years, who died in his hundredth year, and who was the last Head of a House who habitually wore an official wig. The Oxford tradition is that Routh was elected President with an idea

that he would not live very long. This expectation was not fulfilled and if it had been the world would have been the poorer. Though we do not mean that it is always necessary to continue to obey one precept throughout a period of 75 years, yet it is right to remember that it is but little use to consult a medical man except with the intention of obeying him and to no class of men is this advice applicable more than to medical men themselves. The late Mr. Swinson's longevity forms a remarkable example of the value of obeying the medical man.

THE UNIVERSITY OF LONDON: THE NEXT MEETING OF CONVOCATION.

THE next meeting of the graduates who are members of Convocation will be held at Burlington-gardens on Monday next, Jan. 15th, at 5 P.M. An especial interest is attached to the meeting as it is possible that it will be the last meeting of Convocation in the present building and that the University will have taken up its abode at the Imperial Institute before Convocation reassembles in May. The new statutes, which are nearly complete, may be laid before Parliament in the next session. If this be so Convocation will have the duty in May of appointing its representatives on the Senate of the re-constructed University. They will be 16 in number in addition to the Chancellor of the University and the Chairman of Convocation, and eight of the 16 will retire every two years. The graduates will vote separately in the different faculties on signed voting papers. Many graduates have paid but little attention to the affairs of the existing University and are therefore not members of Convocation. If they wish to manifest increasing interest in the re-constituted University and to vote at the next senatorial election, their names, with a life composition fee of £1, or a yearly subscription of 5*s*., must be sent to the Registrar of the University not later than to-day (Jan. 13th).

PAROTITIS FROM PLUMBISM.

AT the meeting of the Société Médicale des Hôpitaux of Paris on Dec. 8th M. André Petit and M. Hudelo read papers on Saturnine Parotitis—a condition which, though evidently well recognised by French writers, does not appear to have received attention in this country. In 1882 Comby described hypertrophy of the parotid glands in plumbism, and cases of parotid affection were brought before the society by Achard in 1896 and by Launois in 1897. Claisse and Dupré published an interesting study of the subject in the *Presse Médicale* for December, 1897. Further parotitis has been described in other intoxications—in copper by Chauffard and, more often, in iodide of potassium intoxication by Comby, Villard, Regnier, Balzer, Renault, and Salmon. M. Petit presented to the society a painter, aged 30 years, who first showed symptoms of plumbism in 1889, in the form of colic of which he had 11 attacks. In July, 1898, he had right radial paralysis from which he recovered in three months. In November, 1899, during an attack of colic the parotid regions became painful and swollen and five or six days later right radial paralysis again appeared. The patient presented himself at hospital on the fourth day when the parotid glands were found to be markedly swollen and tender. The overlying skin was normal. There was a blue line on the gums. M. Hudelo related a case in which acute unilateral supervened on chronic bilateral parotitis. A painter, aged 31 years, who had had several attacks of colic and who was suffering from extensor paralysis of the left hand, entered hospital on Nov. 10th, 1899. In February he began to feel pain in the parotid regions which was accompanied by some trismus but not by any swelling. A blue line was present on the gums. The parotid glands were swollen. On Nov. 14th he complained of acute pain in the right parotid region and the gland formed a projection of the size of a hazel nut, which on the 15th was of the size of a small walnut and on the 16th of half of an orange. The skin was tense and red and the temperature was 102·2° F. On the 18th the temperature had fallen to normal and the pain and swelling were much diminished. On the 20th the condition was normal. The mouth could then be minutely examined. Stenon's duct on the right side was indurated and at its orifice the mucous membrane was tumefied, blackish, and ulcerated. Under iodide of potassium the chronic enlargement of the parotid glands quickly disappeared. Two theories of saturnine parotitis have been brought forward—that it is due to irritation by the lead in process of excretion by the saliva, and that it is due to a superadded infection of buccal origin. In the second case the latter theory seems to be the more probable; in the first lead was found in the saliva.

THE BELLADONNA PLASTER CONTROVERSY.

SOME time ago a very interesting inquiry was undertaken with the view of ascertaining how far belladonna plasters complied with the requirements of the British Pharmacopœia. The results were not satisfactory, few of the plasters yielding on analysis the required one-half per cent. of belladonna alkaloid. Since this inquiry certain manufacturers have taken exception to the results because, first, they hold that the samples should have been compared with the standard of the United States Pharmacopœia which, however, appears to be very indefinite on this question. Secondly, a charge of inaccuracy was brought based upon the circumstance that the reports of different analysts varied as regards the quantity of total alkaloids contained in samples bearing the same numbers. Thirdly, it is stated that it was a gross error on the part of some of the analysts that they identified the alkaloids of scopolia carniolica as tropeines. Accordingly a new inquiry was undertaken and the results were published recently in a bulletin issued from the laboratory of the Inland Revenue Department by the Canadian Government. These results are not essentially different from those previously exhibited. The whole controversy should lead to a more definite requirement on the part of the United States Pharmacopœia in regard to the standard of alkaloidal strength of belladonna plasters.

COMPLIMENTARY DINNER TO MR. WATSON CHEYNE AND MR. G. LENTHAL CHEATLE.

ON Thursday, Jan. 4th, in the Whitehall Rooms of the Hôtel Métropole, a complimentary dinner was given to Mr. Watson Cheyne and Mr. G. Lenthal Cheatle on the occasion of their departure for South Africa. The assembly included members of the Council and of the Hospital Committee of King's College, and old and past and present students of the school, among those present being Professor A. Hughes (the chairman), Dr. W. D. Halliburton, Dr. Playfair, Dr. Burney Yeo, Dr. Crookshank, Mr. C. E. Layton, Mr. George W. Bell, Mr. C. Caudry, Rev. Dr. Ware, Mr. A. H. Morton, Mr. W. Rose, Dr. Curnow, Dr. N. Tirard, Mr. F. Lee, Captain V. Mathews, Dr. F. Willcocks, Mr. A. Carless, Dr. Urban Pritchard, Dr. Dawson Williams, Mr. P. T. Beale, Sir Hugh Beevor, Dr. W. A. Turner, Mr. L. V. Cargill, Mr. M. M. McHardy, and Mr. A. S. Underwood. The toast of "The Queen," proposed by the chairman, was most enthusiastically honoured, while the toast of "The Army, Navy, and Reserve Forces," also proposed by the chairman and responded to by Captain V. Mathews, was patriotically received. The toast of "The Guests of the Evening" called forth from Mr. Watson Cheyne and Mr. Cheatle words of thanks for the honour which had been

done them by their hospital. The Rev. Dr. Robertson proposed "King's College Hospital," to which Dr. Burney Yeo replied. During the course of the evening the two guests were chaired round the room by the students who afterwards called upon Mr. Cheyne to add to the musical portion of the programme, to which he responded by singing "Annie Laurie." On Saturday, Jan. 6th, the friends of Mr. Cheyne and Mr. Cheatle assembled at Waterloo Station to wish them God-speed and a safe return. The students of the hospital were there also and testified their affection and esteem for their departing teachers with no uncertain voice.

A VIEW OF SANITARY PROGRESS IN 1899.

OF the multitude of important public subjects which demand attention none, perhaps, appeal less to the notice of the average man than the vital ones of sewerage and water-supply. In passing through the streets of his native town when his progress is barred by the excavator he may murmur a few uncomplimentary remarks relative to the authorities having caused him some personal inconvenience, or, if a householder, the prospective addition of an extra shilling on the rates may add to the interest of the occasion; but as to constructive details, management of, or the final disposal of, the sewage, the average man is supremely ignorant and indifferent. All those of us, however, whose duty or inclination directs attention to these questions must have noticed that the year that has just passed has been one of exceptional activity throughout the country both in relation to water-supply and to questions of sewerage. Progress has been from time to time reported as to the practical inquiries of the Royal Commission on the Disposal and Treatment of Sewage, but the task of practical investigation is so great that it would be idle to expect the report to appear before some time has elapsed, but the mere taking of evidence has directed the minds of thinking men to the subject. The inducements held out in favour of recent methods introduced to assist in the disposal of sewage by bacterial agency have stimulated bewildered county councillors to borrow, often vast sums of money, for sewerage works, hoping thereby to escape from an incubus which grows yearly more insupportable. The ultimate results of these contracted debts, which frequently seem to be enormous in comparison to the individual populations, it is difficult to forecast, but judging by past experience it is to be feared that the works undertaken will not continue in a state of efficiency to the end of the term for which the loans have been advanced without very considerable future outlay. Another difficulty has been the increased demands for water made by growing population largely owing to the introduction of water-carriage as a means to sewage disposal. This and the wholesale pollution of our rivers and streams by the wastes from factories and by raw or inefficiently treated domestic sewage has driven local authorities to seek in districts remote from human habitation those pure supplies which, but for the previous neglect of all sanitary laws, would be by their own doors. To attempt to enumerate a tithe of the work at present contemplated or in hand would yield a list of formidable proportions, but our readers will readily recall the names of some of the many important works in progress. Whether the present rush by rural communities towards the water-carriage system, in imitation of our large towns, is a wise course and the true solution of their sewerage problem is perhaps questionable. Many whose opinions are worthy of very careful consideration by reason of the study devoted by them to this subject do not believe that this system of water-carriage is the "be all and end all" of a great question, as its votaries would have us to believe, for it is by no means difficult to conceive districts and conditions where such a system is undesirable. County councils are awkwardly placed as to obtaining independent information upon any other system, as the advice most easily available is from sources devoted entirely to the one so universally adopted. In this matter it is to be hoped that the inquiries of the Royal Commission on the Disposal and Treatment of Sewage will be of great assistance. It does not follow that because in some instances a dry system of collection and disposal has not been attended with brilliant success some such system may not yet be found infinitely preferable to one of water-carriage. Recent research has added largely to our knowledge of this subject, and many objections that previously seemed fatal to success have been removed.

DENTAL APPOINTMENTS AT GENERAL HOSPITALS.

IN THE LANCET of Dec. 23rd, 1899 (p. 1749) we published an annotation upon the above subject and in the two following issues, of Dec. 30th, 1899, and of Jan. 6th, 1900 (pp. 1858 and 62), letters appeared from correspondents who were interested in the matter. Generally the opinion seemed to be that where a medical school was attached so that the dental surgeon had to act in a teaching capacity as well as in a purely professional one, then he should possess a medical qualification as well as one in dental surgery. We have received a copy of a petition to the board of management of the London Hospital. The petition is signed by past and present dental surgeons, all of whom also possess medical qualifications, of the 12 great metropolitan hospitals having medical schools attached, and it approaches the board with a request that it may be made compulsory "at your institution for all candidates for the post of dental surgeon to be registered on both the Dental and Medical Registers." The petitioners further state that they are unanimously of opinion that dental surgeons whose duty it is to teach medical students or practitioners shall have received at least the additional medical education implied in the conjoint diplomas. They conclude by stating that "something more is necessary in the person of a teacher at a hospital than that he shall have passed the ordinary pass examination that entitles him to practise." We need not recapitulate the arguments that we have so recently set forth upon this subject, but will only express a hope that the two metropolitan hospitals which at present consider it sufficient for their dental surgeons to possess only a dental degree will reconsider their position.

SPLENIC ANÆMIA.

THE *American Journal of the Medical Sciences* for October contains an important article by Dr. B. W. Sippy on Splenic Anæmia, a disease of which but a very limited number of cases have been recorded and which has only recently attracted much attention. A man, aged 45 years, went to hospital. He had always enjoyed good health until three and a half years previously when he noticed a swelling in the left hypochondrium and became easily fatigued and short of breath. He complained of slight nausea, vomited occasionally, lost appetite, and suffered from diarrhœa. Then he became rather constipated and had chilly sensations now and then, followed by fever. Epistaxis began two years previously and often recurred. The feet became swollen a month previously to examination. The tumour in the left side gradually grew. He lost about 25 lb. in weight and could walk only a short distance without experiencing fatigue and dyspnœa. There was a slight sub-icteric hue of the skin and conjunctivæ. The mucous membranes were pale. The inguinal glands were slightly enlarged. The lower limbs were œdematous to within a few inches of the knees. There was slight œdema of both wrists. The spleen was greatly enlarged, extending to within three fingers' breadth of the pubes. The liver was enlarged, extending to

within one and a half inches of the umbilicus. Splenic leukæmia was diagnosed, but examination of the bloo showed that the diagnosis was not correct. There were 1,740,000 red and 5214 white corpuscles per cubic millimetre; the hæmoglobin was 30 per cent. The leucocytes showed the following relations: polynuclear neutrophiles, 66·4 per cent.; eosinophile, 10·8 per cent.; transitional forms, 3 per cent.; large mononuclear, 4 per cent.; and small mononuclear or lymphocytes, 25 per cent. Splenic anæmia was therefore diagnosed. The patient was kept in bed and iron, arsenic, and bitter tonics were given. Pallor and œdema gradually increased and ascites appeared. Death took place at the end of four months. At the necropsy the spleen weighed 5·2 lb. The section was red, firm, and uniform. Microscopically the reticulum of some of the Malpighian corpuscles was increased and a few showed considerable sclerosis. The liver weighed 6·2 lb.; there were slight increase of the interlobular connective tissue and marked infiltration of lymphoid elements. Splenic anæmia shares in the general obscurity surrounding the allied disease of leukæmia and the other varieties of pseudo-leukæmia. The splenic enlargement appears to be the primary change and the anæmia secondary, for the former in all the reported cases has preceded the latter, in some for a period of a year. Moreover, recovery has taken place in five cases after splenectomy. Medical treatment appears quite unable to arrest the fatal progress of the disease.

TREATMENT OF GRAVES'S DISEASE.

IT is notorious that hitherto the treatment of this disease has been most unsatisfactory. The way is open for any therapeutical suggestion on the subject and we gladly notice a paper to be found in the *New York Medical Record* of Dec. 2nd, 1899, by Charles L. Minor, M.D., Ashville, N.C. Dr. Minor entitles his paper "Two Cases of Graves's Disease successfully treated as Intestinal Auto-intoxications." It was read before the Mississippi Valley Medical Association in Chicago. After an interesting allusion to the two theories of the origin of this disease—the neurogenic and the thyrogenic and inclining to the latter theory—he gives the details of two cases treated, and in one case, if not in both, safely cured on the theory that the disease has its origin, in some cases at least, in an intestinal auto-intoxication. Dr. Minor in a footnote alludes to Dr. C. M. Allan's case of Graves's disease following influenza which was much benefited by the administration of large quantities of bile (pig's, in the form of Burroughs and Wellcome's tabloids).[1] Dr. Minor's first case was a fairly typical one. The patient was a young woman, aged 22 years, and she was not neurotic. Her childhood was healthy save for frequent attacks of tonsillitis. In her seventeenth year she had typhoid fever, with no sequelæ; also ague of tertian type. Prior to 1893 her digestion was good, though she was subject to constipation and her appetite was capricious. In 1893 she went, on account of malarial attacks, to Massanetta Springs where she began to suffer acute attacks of indigestion with violent pain in the lower abdomen about two hours after meals, not accompanied with diarrhœa, and generally traceable to indiscretions of diet, favoured by the patient's tastes and the style of living in her home where over-rich and highly-seasoned dishes were the rule. After much social over-exertion in 1895 she developed a very typical chlorosis. In the autumn of 1896 a rapid heart action, apparently the result of much exercise, was noted. In January, 1897, the diagnosis of Graves's disease was made and she went in February of that year under the care of Dr. Osler. All the ordinary remedies were tried without effect. In May she came under Dr. Minor's care, with a pulse of 130, nervous irritability, symptoms of intestinal fermentation with over-distended intestines, thyroid visibly enlarged, especially on the left side, and a moderate degree of exophthalmos. After failure with ordinary remedies Dr. Minor acted on the theory of the intestinal origin of the disease. He ordered a strictly regulated diet—the exclusion of all sugars, careful limitation of starches, a few simple green vegetables, such as "squash" and spinach, with underdone meats or chicken. Tea, coffee, hot breads, made dishes, condiments, and candy were all stopped. Meals at regular hours, with quiet and repose, but not rest in bed, were ordered. Lactate or albuminate of iron was given, with anti-fermentative mixtures, such as salol, resorcin, beta-naphthol, and guaiacol carbonate, not forgetting an occasional dose of calomel. But the chief remedy against intestinal fermentation was intestinal lavage with hot water (from 100° to 105° F.), allowing from one quart to a gallon of water to flow slowly into the rectum till the whole colon was full. This was at first used nightly, then at longer and longer intervals, and was not finally abandoned for about a year. In about six weeks all the principal symptoms were improved. Dietetic indiscretions were invariably followed by a return of the symptoms. By June, 1898, she was completely restored, and in October, 1899, reported herself completely well, with a pulse of 80, and able to ride a bicycle for 25 or 30 miles. In the second case, that of a married woman, a fast eater and a gourmand, similar treatment was equally effective. She remains well at the end of two years. Of course, we cannot generalise on the strength of two cases, but they are full of suggestion, and the profession will soon determine its applicability to the average cases of this disease.

[1] THE LANCET, August 26th, 1899, p. 555, &c.

THE UNIVERSITY OF LONDON: ITS REPRESENTATION IN PARLIAMENT.

No one demurs at the proposition that the medical degree of the University of London as at present constituted marks its possessor as a finished physician as far as the discrimination of examiners and the scope of written and oral cross-examinations can form tests of knowledge. The University has upon its roll of graduates a long list of first-class medical men and a considerable list of eminent ones, so that it is particularly a constituency which might be expected to send to Parliament a medical man. All who follow public affairs must see that medical questions, or, at any rate, questions with a distinct medical side to them, bulk largely in the affairs of the country, yet the medical profession is but poorly represented in the councils of the country. In the House of Lords we have but one peer and in the House of Commons a mere handful of members. We say this without detracting from the merits of the present medical members of Parliament, who are good men individually but too small a body collectively to make much impression upon their fellows. The elevation of Sir John Lubbock to the peerage, a well-earned honour which has long been expected for him, gives the University of London an opportunity of sending a new member to the House of Commons, and medical men everywhere will feel as we do—that a medical man should be selected, if only because of the high medical position which the graduates of the University hold. Two candidates are before the constituency already—Dr. Busk, the Chairman of Convocation, and Dr. W. J. Collins, a late Chairman of the London County Council. Dr. Busk is a commissioner under the London University Commission Act, and therefore has the constitution of the reorganised university at his fingers' tips, while his public record shows him to be a man of the highest general and legal attainments. But in our opinion what may be called the domestic side of London University requires no

voice in Parliament, while St. Stephen's has certainly little need of further legal acumen. Dr. Collins, as a medical graduate with a good scientific position and record and as a public man who has exhibited in his capacity of chairman of the London County Council tact, judgment, and administrative skill, is certainly a strong candidate, but we do not consider that he possesses exactly the qualifications to fit him to sit in the House of Commons in succession to Robert Lowe (Lord Sherbrooke) and Sir John Lubbock as representative of London University. As is well known he is at variance with accepted scientific belief on the question of vaccination. Whether he is or is not opposed *in toto* to vaccination or whether it is only compulsory processes of inoculation that are distasteful to him is beside the point. The general feeling among medical men that the University of London ought to be represented by a medical man surely implies that the Member of Parliament for the University should be an embodied expression of the highest medical opinion. This is what Dr. Collins—an exceedingly clever man, a tried administrator, and an earnest worker in the cause of medicine and public health—is not; and the objection is a serious one.

THE QUANTITATIVE ESTIMATION OF SMALL QUANTITIES OF MERCURY IN URINE.

IT is often desirable to be able to determine the exact quantity of mercury in urine, as when mercury is being administered medicinally or in toxicological practice. We publish this week a somewhat lengthy description of a method which has been devised by its authors with, as they state, both speed and accuracy in view. The method depends upon the fact that stannous chloride when added to solutions of mercury salts reduces them to metallic mercury in a finely suspended condition, and that gold assists by forming an amalgam in collecting together the metallic particles thus obtained in suspension. The method, briefly, is to add stannous chloride to the very dilute mercurial solution and then to pour the resulting mixture on an asbestos filter containing gold. Gold alone is not sufficient to completely extract the suspended mercury according to the authors' experiments. The asbestos is prepared by soaking it with gold chloride and carefully igniting the material, when a residue of finely divided gold remains. The filtrate is clear and the whole of the mercury is retained by the gold asbestos. The asbestos may be dried and weighed and then ignited, the loss equalling the mercury in the given quantity of fluid such as urine. The method is very ingenious, but to us it appears unnecessarily complicated for the simple end in view. We have found that by merely using the terminals of a battery the mercury in the urine may be completely separated in a short time even when present in very small quantities.

THE chief surgeon to the American forces in the Philippines has cabled to the Surgeon-General at Washington that three cases of bubonic plague have occurred among the natives.

MEDICAL FEES UNDER THE POOR-LAW.—At a meeting of the St. Germans (Cornwall) Board of Guardians held on Jan. 4th the chairman stated that Mr. Preston Thomas, who had acted as arbitrator between the board and Mr. Gill, district medical officer, had given his decision in favour of the guardians. As reported in THE LANCET of July 29th, 1899 (p. 278), Mr. Gill had attended one of his club patients for a compound fracture of the leg; the man eventually became a pauper patient of Mr. Gill, and as the case required much care he asked the guardians for extra fees. The board at first allowed Mr. Gill £5 but afterwards, saying they had doubts about the legality of the course, decided not to pay the sum. This naturally caused friction between the guardians and the medical officer and it was eventually decided to appoint an arbitrator.

THE WAR IN SOUTH AFRICA.

IT is not merely that the war is uppermost in men's minds, but it seems to fill them, for little else is talked about. Even the busy practitioner's thoughts must oscillate between the war and the influenza epidemic. If the South African Republics had been arming and preparing for years (even anterior to the Jameson raid) for this rebellion, how has it happened, it is asked, that the fact was unknown, or if known, why was it ignored, seeing that it could have but two meanings—namely, a menace to or war with this country? The Government would probably reply that if any step had been taken at that time to demand an explanation from the Boer Government the Opposition would immediately have treated their action as only calculated to force the Boers into war, and the nation would in all probability have backed them in that view. It must be admitted that there is some force in that argument, seeing that a policy of patience and forbearance was once the dominant cry, whereas it is now quite the reverse. But if the Government was convinced that the facts were as they were and that they could only lead to one logical conclusion, how was it that they had not the courage of their opinions? A strong and decided course of action if adopted long ago would probably have averted war altogether, and it certainly would have put us into the best and most favourable position for successfully undertaking it. Further, war having become inevitable after the Boer ultimatum, why was not a large and continuous supply of troops and guns sent out and accumulated in South Africa with the view of carrying out a well-defined strategical object by means of a concentrated force, instead of allowing our strategical plans to be frustrated as they have been, owing to the necessity of dividing and crippling our army in its efforts to relieve so many besieged garrisons? There cannot be much doubt that all our present difficulties in this South African campaign have arisen in this way. The generals and troops have found themselves face to face with the most difficult and complicated situations. They have done their best under the circumstances; the troops have fought with a spirit, pluck, and valour that have never been surpassed, and under very trying conditions. It is, however, as easy to be wise after the event as it is useless to expect explanations at this time.

We are writing with the news from Ladysmith fresh in our minds. No one can read of the splendid and successful efforts of that garrison in its defence without a flush of pride and without cherishing the hope and belief that it will continue to hold out until it is relieved. Ladysmith is not by any means a Plevna. It is in reality and by natural position relatively a weak place for defensive purposes, but this renders its defence all the more praiseworthy and gratifying. "The enemy," Sir George White summarily states, "were repulsed everywhere with very heavy loss." Experience, however, warns us not to assume that the Boers will accept this as final. The immediate future of the war, at any rate, depends upon the result of Sir Redvers Buller's battle which many believe imminent. The position held by the Boers is one of great strength and it will require all the strategical and tactical skill of Sir Redvers Buller and his generals and a supreme effort on the part of the troops to carry it and relieve Ladysmith. We do not know whether the requisite transport is present or if all the arrangements have yet been completed, which, it goes without saying, must be complete before the attempt can be made with a reasonable and well-grounded assurance of success. Should it prove successful it will probably prove the beginning of the end, for the neck of the military power of the Boers will be broken.

We do not think that the extraordinary conditions of the warfare in South Africa have ever been realised in the way they should have been. Wherever the British forces have encountered the Boers in the open field they have beaten them and they have, again and again, even driven them out of strong positions. But for the first time in warfare, so far as we know, our troops have had to attack an invisible enemy armed with the best and most destructive weapons that modern science can devise. As an officer with Lord Methuen's force has graphically described it: "Perhaps you think it is easy to see a Boer, but it isn't. We have fought four tolerably big battles against them, but few of us have seen a single Boer. He is the invisible enemy. He lies in the grass, deep down in a trench, or behind a rock

and spits death at us all day long, but we never see who is killing our men. An English soldier of imaginative mind might come to think of the enemy as a sort of nineteenth-century invention—a vapour like the colourless smoke of the new powder—or a demon or an essence." The Boers' tactics and method of fighting are traditional with them and they are always mounted, but these facts, curiously enough, seem to have been lost sight of, for the force sent against them were at first weak in mounted infantry, cavalry, and artillery. What with the sickness and the number of wounded in Ladysmith, the decreasing food supplies, the pressure of military duties, and the nervous tension which the strongest and bravest soldiers must experience under the conditions of life in that garrison, it speaks well for the discipline and fortitude of the troops that they have so far been able to repel all attempts at storming the place.

The general health of the army keeps very good. There is, however, as might be expected, a considerable amount of sickness incidental to hard field service anywhere—the more important diseases being enteric fever and dysentery. The climate is good, and we learn on all sides that wounds do well in South Africa. Transports keep arriving at the Cape and large additions are being made to the strength of the British force. The various Red Cross societies are working successfully in unison with the regular army medical services and are able to render very effective supplementary aid in different directions to that afforded by the regular supply branches of the army. The difficulty on war service not usually owing to any lack of material or equipment—for there is an abundance of stores of all kinds—but arises from the question of their distribution, so as to have them present at the place and moment they are wanted and of the particular kind required.

As our readers are aware, the nation shows no sign of wavering in its determination to carry on the war to a successful issue and the spirit and enthusiasm evinced in this country, in the colonies, and in India are remarkable and impressive. Not only are troops being sent from our colonies but field hospitals are being fully equipped in *personnel* and material, the display of generous patriotism being unanimous.

We would call particular attention to the very interesting and instructive notes kindly forwarded to us by Sir William Mac Cormac from the seat of war. The account given by him of the results of serious bullet wounds will come as an astonishing revelation to many surgeons.

(NOTES FROM SIR WILLIAM MACCORMAC.)

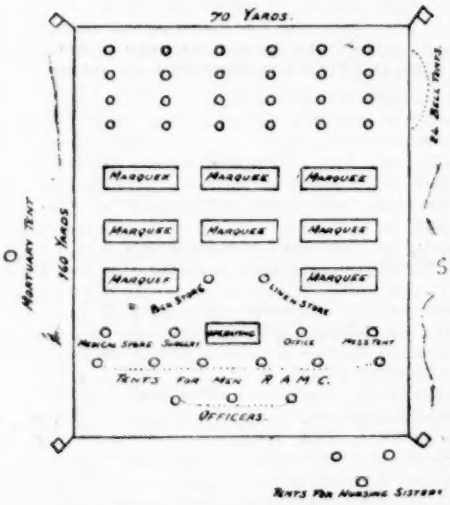
(*Continued from page 59.*)

THE Fort Hospital at Pietermaritzburg is in charge of Lieutenant-Colonel Johnstone, R.A.M.C. There are under his command a varying number of officers of the Royal Army Medical Corps and five civil surgeons, also a staff of army nursing sisters, assisted by civil nurses and volunteers. This hospital originally consisted of 90 beds, but the number has now been increased to 550 by converting some barrack-rooms in the vicinity into hospital wards. More barrack-rooms are daily being suitably equipped, so that the number of beds available for sick and wounded (including 50 beds at the College Hospital, 70 at the Assembly House, and 50 at Grey's Hospital) is being increased until the total number of 1020 is reached. The situation is a commanding and healthy one on the top of a hill just outside the town, a site partly occupied in old days by a fort. There was no operating-room in the original hospital, so a suitable ward has been converted into one. The messhouse of the officers of the 5th Lancers has been converted into an officers' hospital, the anteroom and large messroom making two beautifully ventilated and comfortable wards.

The many paths in the hospital compound are still obstructed by barriers of barbed wire and barricades. These were constructed about a fortnight ago on the occasion of a threatened attack by the Boers on Pietermaritzburg. This scare impeded to a great extent the equipment of the hospital, as the whole of the *personnel* had to be transferred at very short notice to the College Hospital, the fort being completely deserted as a hospital and occupied by troops. On the retirement of the Boers beyond Estcourt a return journey of the hospital stores had to be made and much changing was needful, but the equipping has gone on rapidly since. There is, besides, within easy reach at Durban the hospital ship *Spartan* with 130 beds, and a register is kept of the transports to which the sick and wounded may be sent as well, and of the available medical staff and nurses. The ambulance is capable of taking 92 sick and wounded—82 lying down and 10 convalescents. Colonel T. J. Gallwey, the Principal Medical Officer, thinks this considerable provision is not altogether adequate to the possible requirements should a great battle be fought shortly on the Tugela river.

No. 4 Stationary Field Hospital arrived at Frere on the evening of Dec. 11th. It was detrained immediately and a site was chosen in the immediate vicinity of the railway line as being a convenient place for entraining the wounded. This hospital is to be the first stationary hospital on the lines of communication and will be the refuge of the sick disgorged by the four field hospitals with the four brigades as the latter move on in the fighting line. The next stationary hospital will be at Estcourt. Several of the bell tents were equipped ready for the reception of sick on the evening of arrival. By noon on the following day most of the tents were equipped and ready and had already received about 40 sick from the brigade field hospitals. This hospital consists of a fully equipped field hospital with the addition of eight large marquees, as is shown in the plan (see Fig. 1.) Its

FIG. 1.



Plan of No. 4 Stationary Field Hospital at Frere.

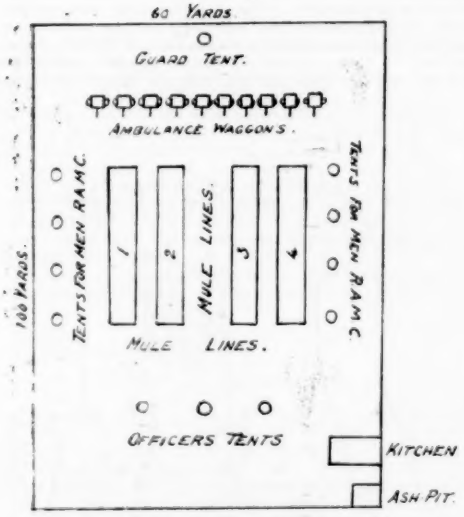
arrangement has been designed by Major R. Kirkpatrick, R.A.M.C., who is in command. The other officers are Major Mallins, Captain F. A. Symons, Lieutenant Simson, of the R.A.M.C., and Lieutenant-Quartermaster Short. There are 38 non-commissioned officers and men of the Royal Army Medical Corps, including compounders, cooks, &c., and also two army nursing sisters. At 4 P.M. on the evening of Dec. 11th this hospital (packed in trucks on a special train) was making its way into the railway station at Frere, and at the same hour on the 12th, a hospital ready for 150 sick (or more) distinguished by the Geneva Cross flag, occupied the ground. When the expected action on the Tugela river takes place there will be a body of 1200 civilian stretcher-bearers, under the command of regimental officers, whose duty will be that of conveying the wounded half way from the fighting line to the hospital, the first half of the journey being performed by other bearers of the same variety attached to the bearer companies. Each stretcher will be supplied with a squad of 25 bearers, this large number being told off so as to provide for frequent relief during a journey of possibly 30 miles. This arrangement has been devised by Colonel T. J. Gallwey, R.A.M.C., who has experienced the usefulness of this plan in Egyptian warfare. The country surrounding the Tugela river is so rough that the carriage of seriously wounded men by mule ambulance waggons would be extremely distressing to the patients. Each bell tent is supplied with four stretchers, each patient having a stretcher, mackintosh sheet, knife, fork, spoon,

basin, &c. The marquees are equipped with eight stretchers each and are reserved for the more serious cases.

We (myself and my secretary, Captain F. A. Symons, R.A.M.C.) put up our tents in the rear of the stationary hospital, arranging for our own cooking, &c. We have also been provided with mules and carts for our own use which are following us from Pietermaritzburg in charge of a sub-conductor of the Army Service Corps. We therefore form a separate little unit of our own, free to move as we like, taking up our headquarters at No. 4 Hospital. The water here is very scarce and muddy and requires careful boiling or filtering before use. Baths at present are practically disallowed.

Dec. 12th.—Our mules and carts arrived this morning, but are not yet ready for use as the wheels of the carts have become injured. Through the kindness of Major Ricketts, R.A.M.C., commanding No. 2 Bearer Company, we obtained the use of an ambulance waggon for to-day. This waggon is drawn by 10 mules. It is a 10-feet canvas-covered, heavily built waggon, fitted with two front seats and two side seats running the length of the waggon. These seats are well cushioned and the side ones may be turned up when not in use, so that two stretchers can be placed on the floor of the waggon. The outside is painted with a large red Geneva cross and the waggon also carries a Red Cross flag on a staff. Our waggon was driven by two Kaffirs, one handling the reins and the other wielding a huge whip like an 18-ft. salmon rod. We were also accompanied by two sergeants of the Royal Army Medical Corps. We first visited No. 2 Brigade and inspected the encampment of the field hospital and bearer company attached thereto (see Fig. 2).

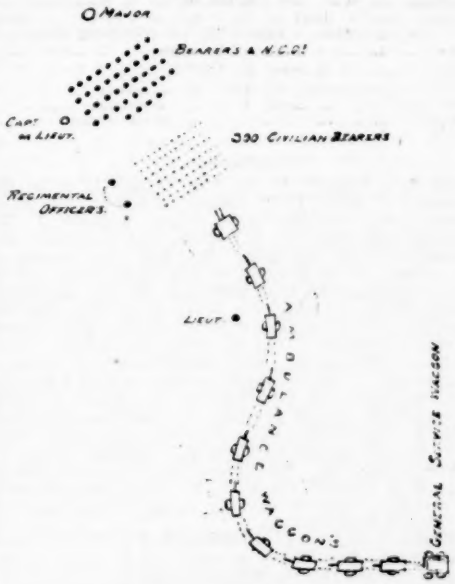
FIG. 2.



Plan of a Bearer Company Encampment.

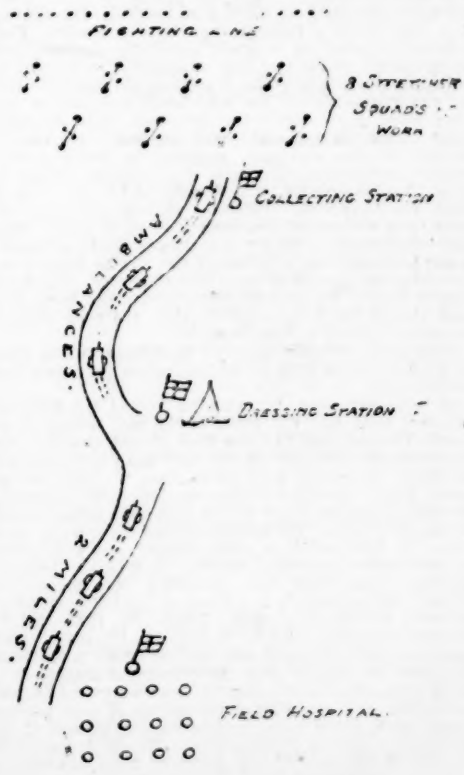
These always work together and move with their brigade in action. The bearer company pick up the wounded, dress their wounds as well as possible, and send them on to their own field hospital. No. 2 Bearer Company is under the command of Major Ricketts, R.A.M.C., the two other officers being Lieutenant Palmer, R.A.M.C., and Lieutenant Wroughton, R.A.M.C. This company is of the usual service strength and equipment, and its description applies to the other companies with this division. The officers and sergeant-major are all mounted. There are 32 bearers, making eight stretcher squads, and these, with the remainder of the company, performing the different duties described in the list below, march in front. These are followed by the water cart and then come 10 ambulance wagons. These bearer companies march into action (each with its own brigade), form their own collecting and dressing stations, pick up the wounded, apply first-aid dressings, pass the wounded to the rear through the collecting and dressing stations they have formed, and thus complete the transit of the wounded from the front line to the field

FIG. 3.



Plan of a Bearer Company on the March.

FIG. 4.



Plan of a Bearer Company in Action.

hospitals. The following plans will serve to explain their movements (see Figs. 3 and 4). The 300 civilian bearers mentioned above are shown as accompanying the company.

Strength and Distribution of a Bearer Company.

Major	1	Corporals	6
Lieutenants	2	Privates	8
Sergeant-Major	1	,, as cooks	3
Quartermaster-Sergeant	1	,, as bearers	32
Compounder	1	,, as servants	3
Sergeants	4	,, as supernumary	1
Bugler	1	Total	64

300 civilian bearers.

The field hospital of the 2nd Brigade is under the command of Major J. C. Culling, R.A.M.C., the junior officers being Captain H. J. Parry, Captain J. W. Jennings, Lieutenant J. W. Leake, and Lieutenant and Quartermaster H Spackman, R.A.M.C. It consists of the ordinary field hospital of 100 beds, about 40 of which are at present filled with cases of local complaints. These patients are being sent to No. 4 Stationary Hospital as soon as possible so as to allow the field hospital to move off with its brigade. After inspecting the hospital, which has been already carrying on its duties here for a fortnight, we again set forth in our waggon and drove to the 4th Brigade. Here we found the field hospital and bearer company encamped and arranged in exactly the same manner as those of No. 2. The field hospital is under the command of Major G. T. Goggin, assisted by Major F. S. Heuston, R.A.M.C., and two lieutenants. The bearer company is commanded by Major E. O. Milward, R.A.M.C. We found them all ready for a sudden departure and fully equipped and prepared for all emergencies of the field.

We then drove away in the direction of a hill about three miles distant from which we were told we could see the Tugela river and the Boer tents on the far side. The ground is very undulating and extremely bumpy for an ambulance waggon, which latter fact proved to us the efficacy of the 2400 bearers engaged by Colonel Gallwey.

On a hillock we espied as we went along what appeared to be a deserted encampment. This proved to be the place where a small party of Boers were suddenly disturbed at their meal about a fortnight ago by our troops. They evidently departed in a great hurry, for our sergeants ran up the hill to the spot and returned with two excellent chairs, ten good dinner-plates, a soup-tureen, vegetable-dish, and two stirrup-irons. The soup-tureen especially is now being made most useful for our little mess in camp, which Captain Symons and I run together. We reached our hill in time and were rewarded by seeing a most beautiful valley with the Tugela river running through it. About 15 miles away are the large range of hills in a dip of which lies Ladysmith. Chieveley railway station is indicated by a zinc-roofed house and a clump of trees. Some Boers' tents could be seen with glasses on the hills between us and Ladysmith and the camp of the Fusilier Brigade was situated about a couple of miles from Chieveley. The Naval Brigade have some guns at Chieveley and the Boers have some also on the hills across the river, the noise of which can easily be heard at Frere Camp.

If the expected battle comes off at Colenso, on the river, we shall easily be able to see the whole panorama from this little hill.

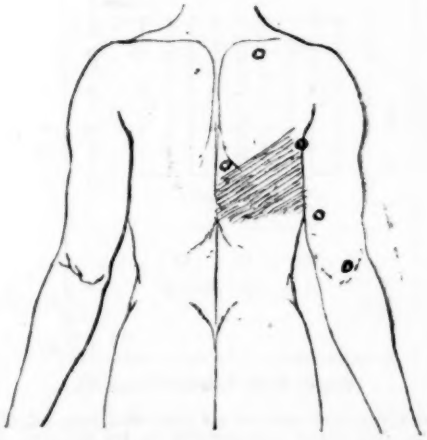
On our way back to camp we viewed the upturned armoured train and the grave of the poor fellows of the Dublin Fusiliers killed at the time of that disaster. The iron protection plates are pierced with many shell holes and the trucks themselves have rolled down the bank and are upside down. Numerous soldiers were employed in breaking off small fragments of iron work to take away as mementoes. Within 20 yards of the train is situated the grave of those killed. It has been very neatly covered over with cement by the Border Regiment, in which by means of inserting cartridge cases they have inscribed the following:—"Here lieth the remains of the men of the Dublin Fusiliers killed in the armoured train on Nov. 15th, 1899. R.I.P." The grave is neatly railed off by wire fencing and a wreath is on the top with a paper attached, on which is written—"A mark of respect from the Connaught Rangers." A party of soldiers stood round the spot sadly reading the inscription, the whole situation making a most pathetic scene and bringing home most vividly the sadness of war and the probable death still to come. We also inspected the remains of the iron railway bridge at Frere, the back of which is completely broken.

Dec. 13th.—The naval and Boer guns boomed away in the distance from daylight until about 9 A.M. We went again to our hill, but all was then quiet, and the Boers are reported to be retiring. Three out of the four brigades moved on to-day at 1 P.M., their destination being Chieveley, and unless the Boers are really retreating from Colenso, we expect to see the battle early to-morrow morning. The field hospitals have moved on with the brigades, and we saw one of them, fully packed, move off with all its baggage and tents, to be probably re-erected this evening at Chieveley. All the medical arrangements are fully complete in readiness for a big battle at any hour. The mail goes to-night and this report with it.

There are many interesting cases here at present. One cannot help contrasting with amazement the comparative harmlessness of the injuries so frequently inflicted with the Mauser rifle bullet with the frightful extent of the damage done by those of the needle-gun and the Chassepôt. To anyone familiar with the wounds caused by these weapons many of those inflicted by the Mauser rifle might be regarded as being somewhat of the character of a "pin-prick." Quite a large proportion of the wounded, in fact, have returned to duty, and several patients whom I have seen have been wounded for the second time at another engagement.

Private ——, aged 22 years, was wounded by a Mauser bullet at Beacon Hill, Estcourt. He states that the bullet came from a distance of 2000 yards. It entered his back at about one and a half inches above the middle of the spine of the left scapula. A short time after being wounded he suffered from slight hæmoptysis. A tender area of about two and a half inches in diameter, showing marked emphysema, made its appearance around the right nipple. His chest was skiagraphed and the conclusion thereby arrived at by Dr. Irvine (the civil surgeon in charge of the case) was that the bullet, having entered the left lung at the point above described, travelled across the thorax until it met the fourth right rib; it then changed its course upwards behind the third rib and was found embedded in the second interspace

FIG. 5.



The five external wounds are indicated. The shaded area indicates effusion.

parallel with the ribs, the base of the bullet being nearer the skin than the point. An incision was made by Dr. Irvine along the upper border of the third rib about two and a half inches external to the nipple line, cutting through the pectoral muscle and external intercostal muscle. The bullet was then extracted without any difficulty from between the two layers of intercostal muscles. The hæmoptysis ceased after the operation, and the patient now presents no symptoms whatever. The wounds are healed.

Private —— of the 2nd West York Regiment, aged 26 years, was wounded by Mauser bullets at Willow Grange on Nov. 23rd, receiving the following wounds: first, two perforating gunshot wounds of the right arm, entering at the outer side of the arm at one and a half inches above the

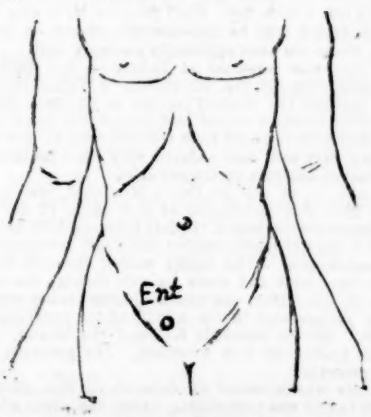
external condyle. The bullet ran up through the triceps, the exit being at the junction of the upper three quarters and lower quarter of the arm, about one inch posterior to the sulcus behind the outer border of the biceps on the inner side. It then entered the axilla a little posterior to the apex, and this wound can be probed for an inch. No bullet is discoverable either by probe or by x ray. He received, secondly, two wounds on the back—one just internal to the superior posterior angle of the right scapula, and another slightly to the right of the sixth dorsal vertebral spine. Possibly these four wounds, being more or less in line, were made by one bullet, and the one opposite the sixth dorsal by another, and that this accounts for the chest symptoms. On admission to the hospital there were acute pain in the epigastrium and the lower costal region on the right side and increased vocal fremitus over the right lower costal region, and it was found on examining the patient on Dec. 1st that there was an area of effusion at the right base posterior to the angle of the scapula (see Fig. 5). There was paralysis, but no anæsthesia of the right lower extremity. This anæsthesia is improving, as is also the costal pain. The patient states that he first received the arm wound and subsequently that in the back. Civil Surgeon Irvine, who is in charge of the case, conjectures that the bullet entering at the sixth vertebra may have injured the pleura and lung, and that all the other wounds were caused by the first bullet. No bullet has as yet been discovered in the lung by means of the x rays.

Private —— of the 1st Manchester Regiment, aged 27 years, was hit at Elandslaagte by a Mauser bullet, the entrance wound being at the right side of the neck at the posterior border of the sterno-mastoid an inch above the clavicle, and the exit wound being at an exactly similar position on the left side of the neck. On admission the patient could not swallow properly or speak on account of pain in the larynx, but these symptoms rapidly improved, until at present, beyond a slight difficulty in swallowing, he is perfectly well.

Private ——, of the 2nd Gordon Highlanders, aged 26 years, was wounded by a Mauser bullet at Elandslaagte. The bullet entered the external surface of the left thigh at the junction of the upper and middle thirds. It passed transversely through the extensor muscles in front of the femur, emerging about an inch lower down than the entrance wound. It then entered the right thigh on the same level, passed behind the bone, and emerged on the outer side at the same level. There was hardly any hæmorrhage, and the patient completed the charge (of about 800 yards) after receiving these four wounds.

Private —— of the 2nd Gordon Highlanders, aged 22 years, was wounded by a Mauser bullet at Elandslaagte.

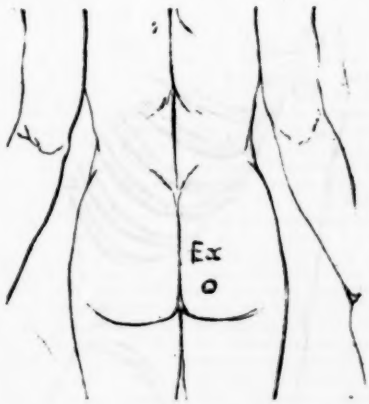
FIG. 6.



Shows entrance wound.

The entrance wound is an inch above the symphysis pubis and one inch external and to the right (see Figs. 6 and 7). The exit wound is one inch above the level of the anus and about two and a half inches external to the middle line in the right buttock. After being wounded he ran for about one-third of a mile without inconvenience. There was hardly any hæmorrhage, but the right testicle swelled up within an hour. He suffered for about a fortnight with pain at the root of the penis and on defecation, but there was no blood in the stools and he has now perfectly recovered.

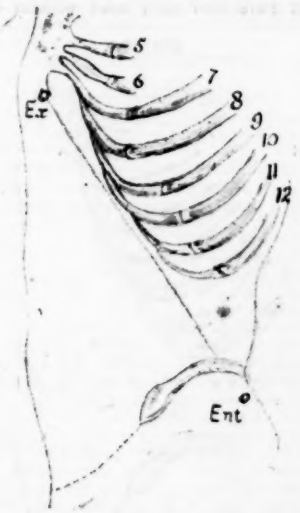
FIG. 7.



Shows exit wound.

Private —— of the 2nd West Yorks Regiment, aged 20 years, was wounded by a Mauser bullet from a distance of about 1500 yards (?) at the battle of Willow Grange on Nov. 23rd. There is a perforating wound of the abdomen. The bullet entered half an inch external to the posterior superior spine of the left ilium and pierced the ilium (see Fig. 8). The wound of exit is situated one and an eighth

FIG. .



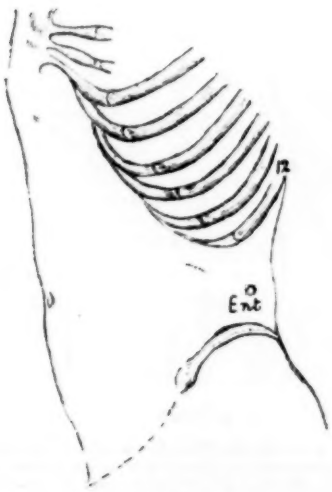
Shows both entrance and exit wounds. The dotted ack suggests that the stomach was traversed.

inches below the level of the ensiform cartilage and one and three-eighths inches to the left of the middle line. It would seem that the bullet must undoubtedly have passed through the stomach. The wounds healed by first intention and the patient has suffered no inconvenience in any way, having eaten his food ever since the wound was received. He is now convalescent.

Private ——, of the 2nd West York Regiment, was

wounded by a Mauser bullet from a distance of 600 yards (?) on Nov. 23rd at Willow Grange (see Figs. 9 and 10). The bullet entered at two and a half inches above the crest of the left ilium, four inches from the spinal column. The exit wound is situated one and a half

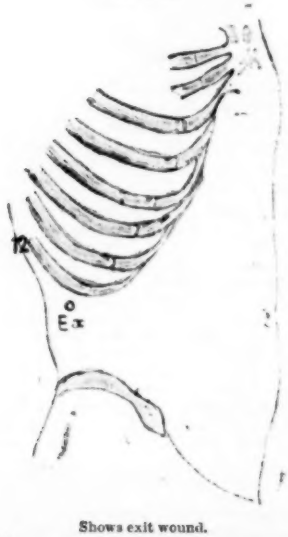
FIG. 9.



Shows entrance wound.

inches posterior to the anterior extremity of the twelfth rib on the right side. The wounds healed by first intention. The bowels have not been moved since the receipt of the wound and enemas have had no effect as the patient cannot retain them. Sulphate of magnesia and calomel have also been tried without effect. The

FIG. 10.



Shows exit wound.

patient states that he fell down immediately he was shot as his legs gave way, and on attempting to rise he found that his legs were disabled. On admission to the hospital it was found that both legs were partially paralysed but that sensation was not affected. The patient could control his bladder, but could not feel his urine passing away through the urethra on micturition. The paralysis in the lower extremities has been slowly disappearing, but it still exists to some extent in the left leg. There is, however, at present, a well-marked hypersesthetic area on the inside of both thighs and in the perineal region (see Fig. 11). The colon and rectum still remain paralysed, no improvement having yet taken place, but sensation has returned in the urethra. From the relationship of the wound of entrance to the colon (and the present percussion resonance) there seems no doubt that the colon has been perforated.

A private of the Dublin Fusiliers was wounded at Talana on Oct. 20th. The bullet entered an inch above the root of the nose. The exit was at the junction of the frontal and

FIG. 11.

The shaded area indicates hyperæsthesia of inner surface of thighs and under surface of scrotum.

squamous portion of the temporal bone on the right side, about one and a half inches above the outer margin of the orbit. The bones were drilled without any fracturing, the entrance and exit wounds being exactly the same size. The brain substance protruded. The wounds were dressed with dry boric dressing on the field. The patient suffered no inconvenience whatever and the wounds were completely healed by the fourth day. Civil Surgeon Mate who records the case, states that he last saw the patient on Nov. 4th walking about the ward apparently perfectly well.

An officer was wounded at Talana on Oct. 20th. The bullet passed through the left antrum of Highmore, making its exit through the mastoid process on the same side. On Nov. 3rd the entrance wound had healed, but small spicules of bone had been removed from the exit wound. The patient was doing very well and suffered very little inconvenience except that of deafness on the left side.

Private ——, of the 1st Devon Regiment, was wounded on Oct. 21st at Elandslaagte at a distance of 400 yards. The entrance wound was in the left knee one inch below and one and a quarter inches behind the tibial insertion of the semi-membranosus. The bullet passed through the tibia and the knee-joint and made its exit through the external condyle of the femur, one and a quarter inches above the articular surface and in the middle of the antero-posterior diameter. Simple synovitis followed the wound, but the apertures healed by first intention. The synovitis is still slightly present.

A private was wounded at Estcourt on Nov. 23rd. The entrance wound was immediately below the ninth left costal cartilage and the exit wound was between the seventh and eighth ribs on the right side in the mid-axillary line. There was considerable shock and internal hæmorrhage was suspected. Laparotomy was performed by a civil surgeon from Johannesburg in the middle line above the umbilicus. When the abdominal cavity was opened it was found that the bullet had ploughed its way along the upper surface of

the liver, making a groove close to its anterior border, the length of which was about two and a half inches. There evidently had been very little hæmorrhage. The peritoneal cavity was washed out with saline solution and a strip of iodoform gauze was placed in the groove and brought out through the abdominal incision, thus forming a drain. This was removed on the following day. The abdominal incision was closed in three layers with silk and silkworm gut. A week after the operation, when the patient was last seen, he was progressing very favourably.

A private in the West Yorks Regiment was wounded at Willow Grange on a Thursday. The bullet entered the nape of his neck on the right side, opposite to the third cervical spine, one and a half inches from the median line, and emerged at the inner canthus of the left eye. Some loose pieces of bone, probably portions of the ethmoid, were picked out, but the man suffered no practical inconvenience. He sat up the same evening, on the next day he was reading the paper and smoking, and on the Saturday he was going about without any complaint of any kind.

In a man, who was lying down at the time, a bullet entered about the middle of the supra-spinous fossa of the left scapula, emerging to the left of the middle line at the margin of the scapula at the level of the fifth costal cartilage. On the second day the patient had some hæmoptysis which continued slightly on the two following days. The patient had no other complaints and was sent to Pietermaritzburg.

A trooper was shot on the railway line at a point just opposite to where the stationary hospital now is. The bullet entered a little above the junction of the middle and upper thirds of the right femur, on its outer side, about four inches below the tip of the great trochanter. The bullet, which was fired at a long range, passed through the femur, causing much comminution, and was felt under the skin on the inner side at about the same level but well behind the artery. The bullet was removed and the result was the same as in an ordinary simple fracture. There was shortening by three-quarters of an inch.

Private —— of the 1st Dublin Fusiliers whilst standing on the cow-catcher of the armoured train on Oct. 15th was struck by a fragment of shell on the right arm. On the patient being seen by Lieutenant Briscoe half an hour after the receipt of the injury it was found that the greater portion of the arm was torn away, leaving the humerus bare for several inches, especially on the inner side. The vessels and nerves were torn through completely, the arm being attached simply by strips of triceps and skin. The patient was suffering greatly from shock. The amputation was completed by dividing the remaining tissues so as to make a cover for the end of the bone, which was sawn square off. The brachial artery was tied and a drainage-tube was inserted, which was left in for three days. On removing this tube secondary hæmorrhage took place. The wound was laid open and the brachial artery was again tied in the wound, the ligature having slipped. The patient afterwards made a perfect recovery.

A colour-sergeant in the West Yorks Regiment had a peculiarly fortunate escape at Willow Grange. A bullet pierced his haversack and struck his dinner-knife at half an inch from the haft, breaking it clean across, the remaining portion being twisted half round. It then traversed a tin of ointment, broke the heavy clasp-knife hanging from his belt, gouged an inch and a quarter out of his dispatch-book (three-quarters of an inch thick) which was hanging beneath the knife, and entered his hip for about one-eighth of an inch, carrying a piece of shirt with it and making a very superficial wound.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

The last engagement at Magersfontein swelled the list of wounded by 38 officers and over 460 men, the majority of whom reached here last week. The officers were accommodated in wards in the old station hospital, which has been incorporated into No. 1 General, and the men have been equally distributed between No. 1 and No. 2 General. I am glad to say that the wounds of the officers, with some few exceptions, have not been very serious and many are on the high road to recovery, the wounds being principally flesh ones of the extremities and in all these cases progress has been uninterrupted. Wounds of bones and joints, on the other hand, are more or less tedious and frequently require operation, the smashing power of the Lee-Metford being very apparent in contra-distinction to the clean perforated wounds caused by the Mauser. We have been obliged to open two more large wards for the accommodation of officers, besides taking a large portion of the Claremont Sanatorium for the less serious and convalescent cases. The latter institution is admirably adapted for the reception and treatment of the wounded, being situated in its own grounds and with every convenience for the comfort and welfare of patients. As there are at present no general hospitals in Natal we may expect a great number of wounded from the last battle at Colenso, which from all accounts seems to have been very disastrous as regards the number of casualties. We had a visit from Mr. Makins this morning; he was up at Modder River during the fight and had the opportunity of operating in several abdominal cases. He returns to-night up country in view of further engagements. The variety, and I may call it eccentricity, of the bullet wounds in this war—by this I mean the direction taken by the missiles and the marvellous escapes of big vessels and bones—would fill a good sized volume, but I have not, I am sorry to say, time to detail them and must leave it to those who have more leisure at their disposal. It requires a war like this to teach us how little damage (under favourable circumstances) a Mauser bullet through the lung seems to do. I have at present under treatment two such cases, one of which on admission had very slight hæmoptysis and spasmodic dyspnœa and the other simply presented no signs of lung injury whatever, though the course of the bullet was literally a penetrating one an inch above the right nipple in front, coming out slightly above the angle of the scapula behind. This patient, with the exception of slight shock when first wounded, has suffered absolutely no inconvenience and smokes his pipe with a philosophic calm which is interesting to watch. An amputation of the thigh in the lower third for traumatic aneurysm of the femoral is doing up to date quite well; another officer who, besides this injury, has a compound fracture of the right forearm and a nasty wound over the left orbit is making a bold bid for convalescence. Major R. W. E. H. Nicholson, R.A.M.C., has left us and Major R. W. Barnes has been put in charge of the officers' wards. These are the only changes in the *personnel* I have to chronicle, with the exception that our worthy Sergeant-Major Chalk has been promoted to the rank of lieutenant and quartermaster.

ASYLUM REPORTS.

The Retreat, York (Report for the year ending June 30th, 1899).—This institution has a unique and interesting history. In 1792 William Tuke, a member of the Society of Friends, became convinced that the methods of treatment of the insane, then prevalent, were unnecessarily harsh and severe. The foundation of an institution where the insane could be treated in a more humane and gentle way was decided upon, and in response to an appeal for support members of the Society of Friends contributed the funds necessary to provide "a retired habitation for 30 persons deranged in mind." In May, 1796, the present building (a central block with two wings) was opened. Subsequently, under the Lunacy Acts of 1845 and 1890, the Retreat has been registered as a "Hospital for the Insane." The government of the Retreat is vested in 40 directors, all of whom must be members of the Society of Friends. Four wings have been added since the building was opened—viz., a N.E. wing in 1812, a N.W. wing in 1827, a S.E. wing in 1852, and a S.W. wing in 1858. In 1881 an East Villa was built for gentlemen and in 1890 a West Villa for ladies. Voluntary boarders are received at the institution. The average number resident during the year of the report consisted of 166 patients—viz., 68 males and 98 females. The admissions during the year amounted to 37 and comprised 18 males and 19 females. The average weekly expenditure per patient, excluding the cost of new buildings, was £2 6*s.* 6*d.* The income from patients has been fully maintained and again exceeds that of any previous year. Owing to lack of space and consequent inability to admit many cases that applied for admission the admissions are slightly less than the average of recent years. Dr. Bedford Pierce, the medical superintendent, states in

his report that "rather more than one-half of the new patients admitted were deemed to be curable, but the remainder were decidedly unfavourable cases and had either been under care previously and failed to recover or were cases of long standing that had been treated privately. 13 of the new cases have had previous attacks and one lady has had no less than seven attacks before the present one. In 12 of the patients admitted there was evidence of an inherited tendency towards insanity." 11 patients recovered and were discharged, a ratio equal to 6 6 per cent. of the average number resident. There were 11 deaths to report during the year, a greater mortality than usual. The average age at death was 59 years, although two of the number were but 24 years of age. Two deaths were due to bronchitis and one each to pneumonia, phthisis, bronchopneumonia, general paralysis, and senile decay. One death (that of a female patient) was due to phosphorus poisoning. There was very little sickness among the patients or the staff apart from a few isolated cases of influenza. The principal event of the year has been the completion of the new buildings to provide a home for the nurses in June last. The cost of this has been estimated at about £2700, and donations towards the cost have amounted to £1887 up to the date of Sept. 11th last. Several structural improvements and additions to other parts of the building were arranged for at the same time and the total cost has been estimated to be slightly over £3900.

Glasgow District Asylum, Gartloch (Report for the year ending May 5th, 1899).—The average number of patients resident in the asylum during the year was 465 and comprised 236 males and 229 females. The total admissions during the year were 203—viz., 111 males and 92 females. Of these 140 were first admissions. Dr. L. R. Oswald, the medical superintendent, states in his report that seven of those admitted were over 70 years of age, two being over 85 years. "The nursing of these old people demands the greatest care and tact, for they are specially liable to accidents by reason of their frail condition and interfering ways. They must be kept apart from the acute and excited cases." Alcoholic intemperance is set down as having been the cause of the insanity in 50 of the persons admitted, but in many of these—as, indeed, in other cases—the illness was not due to one but to several causes, of which intemperance was the most prominent. "Intemperance, along with an enfeebled bodily condition, acting in conjunction with prolonged worry or mental strain, or following an influenzal attack, but with intemperance as the main factor," was the cause of insanity in the 50 cases referred to. General paralysis as a condition existed in 9 per cent. of the admissions, and in 16 per cent. a hereditary predisposition to insanity was established. The difficulty of obtaining reliable family histories was so great that it is considered probable that the proportion with hereditary taint was higher. During the year 98 patients were discharged as recovered, or 21 per cent. of the average population. Boarding-out, as a means of dealing with quiet and harmless cases, was largely practised during the year. 44 patients were thus sent out, but of that number seven were returned to the asylum for further observation. The deaths during the year numbered 38, or 8 per cent. of the average number resident. Of the deaths two were attributed to senile decay, three to cerebral hæmorrhage, seven to phthisis and tuberculosis, and 11 to general paralysis. There were 11 escapes during the year, seven of these being effected by patients on parole. The privilege of parole is extended to from 20 to 25 per cent. of the patients and it is much appreciated and seldom abused. Influenza visited the institution but it was not virulent; it lowered the health of many members of the staff, but was not in any case fatal. Work, especially out-of-door employment on farm and garden, for men and women has benefited many. The treatment of acute and curable cases by prolonged rest in bed has been practised with success. Recreation and treatment go hand-in-hand, the grounds adjoining the Loch affording a delightful summer resort for suitable cases. The Nurses' Home is now well on its way to completion and it is now ready for occupation.

Govan District Asylum, Paisley (Report for the year ending May 14th, 1899).—The average number resident during the year was 404, and comprised 203 males and 201 females. The admissions during the year were 342 in number, viz., 177 males and 165 females. 330 patients—171 males and 159 females—were first admissions. Of the 392 patients admitted 118 were transferred from other asylums. This high proportion of transfers is due to the increase of accommodation afforded by the new hospital block. This building, which practically completes the asylum, was formally opened on July 8th, 1898. 85 patients were discharged recovered, or 21 per cent. of the average number resident. 87 per cent. of all the recoveries took place within six months after admission. There were 12 re-admissions of patients who had been previously under treatment in the asylum. Mr. W. R. Watson, the medical superintendent, states in his report that there was no fatal or even very serious accident during the year. Satisfactory progress had been made in laying out the grounds and upwards of 120 male patients were regularly employed in this and other necessary outdoor occupations. The deaths numbered 44, or 11 per cent. of the average daily number resident. "This percentage is somewhat high, but when it is considered that 29 deaths were directly due to disease of the brain and spinal cord the numbers do not seem to call for any special comment here. ..... There were only two deaths from phthisis and these patients were suffering from advanced disease when received into the asylum." 14 deaths, the largest number due to any one illness, were attributed to general paralysis, four each were due to cerebral hæmorrhage and to cardiac disease, and two each to phthisis and to senile decay. The works for the disposal of the sewage by the bacterial method were formally opened on April 25th, 1899. The recently opened hospital section of the asylum for the special treatment of acute and curable cases has been liberally and suitably furnished and the arrangements of the building have been found to be well adapted to the purpose.

THE HEALTH OF RUSSIA, 1893-1895.[1]

THE most recently issued report of the Medical Department of the Russian Ministry of the Interior deals, not, as in previous issues, with the returns of a single year, but with those of three years. The three years in question are 1893, 1894, and 1895. During the first two the cholera epidemic, which had first reached Russia in 1892, was still active and in certain parts of the Empire very much more active than in the first year of its prevalence. Notwithstanding this fact the total recorded mortality in 1893 and 1894 was practically the same as (if anything, rather below) the average mortality of the three preceding years, though higher than that of 1886-88.

The population of the Russian Empire [2] in the years under review was estimated to be as follows:—

	1893.	1894.	1895.
European Russia	101,111,822	102,664,841	104,506,880
The Caucasus	8,177,452	8,326,727	8,599,593
Siberia	4,948,676	5,006,773	5,116,724
Central Asia	6,417,472	6,554,495	6,575,501
	120,655,422	122,552,836	124,798,698

It will be observed from these figures that the population has increased by over 4,000,000, or approximately 3½ per cent., in the course of two years. The increase is calculated by taking the difference between recorded births and recorded deaths in the period in question and adding the result to the number of the population at the beginning of the period. This natural increase in population was distributed over the three years in the following manner:—

	1893.	1894.	1895.
Recorded births	5,314,807	5,479,213	5,651,063
Recorded deaths	3,660,716	3,774,488	3,869,936
Natural increase...	1,654,091	1,704,725	1,781,127

It is pointed out in regard to the figures relating to the population of the empire that this method of estimating it in successive years has recently been shown to lead to results which are only approximately correct, and that almost certainly the figures here quoted are considerably above the truth. Thus, the population reckoned in this way gives for European Russia a population of 104,506,880

[1] Report of the Medical Department of the Ministry of the Interior, Part I. St. Petersburg, 1898.

[2] Excluding the Grand Dukedom of Finland.

at the opening of 1896, and (advancing to a later period than that covered by the report under notice) 106,200,000 at the beginning of 1897. But on Jan. 27th, 1897, a census of European Russia was taken by the method of actually counting heads, and in the result European Russia was found to contain only 103,631,340 inhabitants, or some 3 per cent. less than the estimated figure. This being so it is obvious that the birth-rates and death-rates calculated on the estimated figure are in reality below the truth.

In Central Asia and Siberia the population was reckoned at the time of the census in an indirect manner; the number of dwellings (houses, kibitkas, tents, &c.) was counted, and from four to six persons were supposed to dwell in each. The result was of necessity a mere approximation to the truth, and figures of birth-rates or mortality based upon it must be equally uncertain and may therefore be passed over without detailed notice.

In European Russia the birth-rate in the years in question was 46·1 in 1893, 46·4 in 1894, and 47·1 in 1895, or 46·6 for the average of the three years. The mortality, on the other hand, was 32·1, 32·2, and 32·5 in each of the three years, or 32·3 as an average for the whole period.

The following comparative table is published in the early pages of this report, showing the like statistics for the same period in the other countries of Europe:—

—	Birth-rate (per 1000).				Death-rate (per 1000).			
	1893.	1894.	1895.	Average, 1893-95.	1893.	1894.	1895.	Average, 1893-95.
European Russia...	46·1	46·4	47·1	46·6	32·1	32·2	32·5	32·3
Hungary	42·5	41·3	41·5	41·8	31·1	30·4	29·6	30·4
Austria	37·9	36·7	38·1	37·5	27·1	27·8	27·7	27·5
Italy...	36·8	35·8	35·1	35·8	25·4	25·2	25·2	25·2
Germany	36·7	35·9	36·1	36·2	24·6	22·3	22·1	23·0
France	23·1	22·3	21·9	22·4	22·6	21·3	22·3	22·2
Switzerland	28·4	23·0	28·0	23·1	20·4	20·6	19·7	20·2
Belgium	29·2	28·6	28·5	28·8	20·0	18·6	19·5	19·4
Holland	33·8	32·5	32·8	33·0	19·2	18·5	18·6	18·8
Scotland...	31·0	30·2	30·4	30·6	19·5	17·2	19·7	18·8
England...	30·3	29·6	30·4	30·2	19·2	16·6	18·7	18·2
Ireland	23·0	22·9	23·2	23·0	17·9	18·2	18·4	18·2
Denmark	30·6	30·2	30·2	30·3	18·9	17·5	16·9	17·8
Norway	30·7	29·7	30·6	30·4	16·3	16·9	15·7	16·3
Sweden	27·3	27·0	27·5	27·3	16·8	16·3	15·2	16·1

A table of this kind presents many points of great interest. It will be observed that while Russia occupied the first position among the nations in regard to birth-rate with the remarkably high average of 46·6 births per 1000 inhabitants during the three years in question she at the same time had the highest death-rate. A general mortality of 32·3 per 1000 is a very high one and means that in many parts of the country that figure must be greatly exceeded. It is practically double the mortality which prevailed in Norway and Sweden at the same period and is 77 per cent. in excess of that recorded in our own islands. The excess of birth-rate over death-rate is, however, also remarkably high in Russia, and, accepting the figures as they stand, it would appear that that country is yearly adding by "natural increase" (or excess of births over deaths) from 14 to 15 persons to each 1000 of her population, while in England the natural increase is (or was in the years under review) only 12 per 1000 per annum, and in France it is reduced to a fraction of 1 per 1000, and in some recent years in the last-mentioned country there has been, not a natural increase, but a natural decrease of the population.

As was anticipated above, the death-rate in many parts of the country was much higher than that for the whole country. The highest death-rate recorded in any portion of European Russia in either of the three years was that in the Government of Samara in 1893, when the mortality was 50 per 1000. This high figure was doubtless caused by the epidemic of cholera in that year; but this Government has throughout returned an unusual number of deaths, the mortality there in 1894 being 38·5 and in 1895 44·0 per 1000 inhabitants. Siberia and Central Asia, statistics from which regions are, however, only approximate, returned comparatively low mortality figures, particularly the provinces of Semiretchinsk, Syr-Daria, and Turgai, where the death-rates varied between 17·6 and 20 per 1000.

The report explains the generally excessive mortality in the Russian Empire as being principally due to the extraordinary prevalence of zymotic or infectious disorders. With the exception of Hungary no other European nation suffers so widely from the principal zymotics. The explanation of this fact is not far to seek. Long experience in the west has shown that these diseases are to a very great extent controllable and some of them are almost preventable. But to control and prevent them requires many years' enforcement of strict sanitary legislation; it requires a permanent establishment of trained medical and sanitary officials and the introduction of extensive measures of sanitation—costly schemes of water-supply, of drainage, and the like—all of which imply an immense outlay of money extending over many years, and also a constant and detailed supervision by trained persons over the health conditions of every part of the country. For the present few of these essential factors in the fight with disease and death are possible in a country and population such as Russia and its inhabitants. Two and a half years ago we published, in a supplement to THE LANCET,[3] a very complete description of the sanitary service which has been organised in Russia, and it was pointed out there that the country is provided with a very admirable body of highly trained and able medical officers and sanitary officials and that a great deal had been done to cope with the most difficult problem of controlling the health of town and country. But it was also pointed out there—and the report now under review confirms the statement completely—that the natural difficulties to be overcome, the enormous area of the country, the scattered nature of the population, the character of the people (for the greater part an uneducated peasantry, living always in considerable poverty), and the climatic conditions—all tended to hinder the carrying out of public health measures and in many parts of the country have rendered it impossible to inaugurate even the simplest and least expensive of such measures.

A supplement[4] to the report under review has been published, subsequently to its issue, dealing with this question of the health of the towns in the Russian Empire in 1895. It is in the towns that most has been done of recent years to improve the state of the public health, but it is impossible to glance through the brief summaries of the conditions obtaining in the (about) 700 towns dealt with in this supplement and not be struck by the primitiveness of the sanitary arrangements described and by the general absence (with a few striking exceptions) of good water-supplies, good drainage systems, and of the other essentials to the proper health administration of a town. This being the case in the towns it is easy to conceive what the conditions must be in villages and in remote districts sparsely inhabited by oriental or half-savage nomad tribes.

The introduction to this supplement contains some interesting and instructive remarks on the progress of sanitary administration in Russia and elsewhere. It is pointed out that countries have usually passed through three periods in regard to their attitude towards preventive medicine. In the first period extraordinary measures to control diseases are only resorted to when some infectious disease has already become widely epidemic and is beginning to cause general alarm, or even horror, among the people. In the second period an advance is noted. Taught by experience in the past, early cases of any disease likely to become epidemic are noted by the authorities and measures are resorted to to try to extinguish the infection before it has given rise to a gigantic national or civic disaster. In the third period—the "sanitary period," to which most of the cultured nations have now advanced—a sanitary service is a permanent feature of the national or local organisation. Means for preventing the appearance of infectious disease and for doing away with those conditions which favour the prevalence of all disease, infectious or not, are constantly enforced, and it is recognised that the whole duty of governing authorities from a sanitary point of view is not confined to hurried and feverish measures aimed at the extinction of a few of the more strikingly fatal epidemic diseases.

[3] Medicine, Past and Present, in Russia. Supplement to THE LANCET August 7th, 1897.

[4] Report of the Medical Department of the Minister of the Interior "The Sanitary Condition of the Towns of the Russian Empire in the year 1895," St. Petersburg, 1899.

It is pointed out that the admirable effects of this system have up to the present been most clearly seen in England. "How fruitful the conduct of affairs on these principles," writes the author of the supplement, "may be is best seen in England, where, thanks to the constant regard for cleanliness of soil, water, and dwellings, such exotic diseases as cholera are not looked upon with dread, and where the mortality from typhoid fever, phthisis, and apparently from all other infective diseases, has been very greatly diminished." In Germany the effect of persistent and compulsory vaccination has almost exterminated small-pox. A measure of this sort in Russia would, it is pointed out, have saved over half a million lives in the seven years 1890–1897, to say nothing of the enormous amount of suffering from blindness and deformity which would have been avoided. The money loss to the country from this cause alone is enormous. Estimating the value of every Russian life at the low figure of 100 roubles (about £10 sterling; Farr estimated every English life at all ages at the value of £150; Rochard estimated every French life at 1037 francs, or rather over £40) small-pox has in those years cost Russia a sum of over 50,000,000 roubles. The loss from other infectious diseases is equally great.

Russia, it is admitted, is only on her way to the third or so-called "sanitary" period of her existence. Sanitary legislation is incomplete and is not the same in all parts of the country. With the introduction of local self-government in the form of *zemstvos* these bodies were granted powers of initiating compulsory public health measures, but there is no uniformity in the measures adopted. This, in the opinion of the author of this supplementary report, is one of the matters upon which reform is most needed. The description which follows, one by one, of the principal towns in the country is intended to form a basis for a new measure introducing a uniform sanitary law to be applicable to the whole country.

To return to the prevalence of zymotic diseases throughout Russia the following table is published indicating the extent to which that country is ravaged by these diseases in comparison with other European countries.

Deaths per 100,000 of the Population from Some of the Principal Zymotic Diseases.

	Small-pox.	Scarlet fever.	Diphtheria and croup.	Measles.	Whooping-cough.	Enteric fever.
European Russia* (1893–95) ...	53	114	147	87	66	88
Hungary (1892–94)	35	94	627	101	66	110
Austria ,, ...	20	53	123	42	65	47
Belgium ,, ...	28	16	52	60	53	35
Germany ,, ...	0·2	21	128	29	40	14
Italy ,, ...	7	22	54	37	25	49
Scotland ,, ...	2	20	42	55	53	19
England ,, ...	3	20	31	41	30	20
Sweden ,, ...	0·3	30	69	7	18	19
Holland ,, ...	6	14	34	20	31	20
Ireland ,, ...	0·5	11	20	25	26	20

* It is pointed out that in Russia, Scotland, England, and Ireland enteric fever is included among fevers of undetermined nature.

Figures relating to the sickness-rate from any disease are always, for obvious reasons, far from reliable, and they become still more so in a country where notification of disease is practised only to a small extent. This report contains certain figures of this kind and the most important of them are as follows. Of dysentery—apparently the most prevalent of all zymotic diseases in Russia—272,239 cases were reported, or 220 per 100,000 of the population. Of enteric fever 220,696 cases were recorded, of measles 194,972, of whooping-cough 197,643, and of diphtheria 190,117.

Out of a total registered number of cases of illness of 30,286,613 as many as 4,059,018, were due to infectious diseases (in which are included syphilis with 775,457 cases, other venereal diseases, phthisis, and pneumonia).

Before closing this brief notice of two instructive volumes it may be pointed out that while in the Russian Empire generally the births largely exceed the deaths, in a few places the reverse is the case. Excluding the exceptional year of cholera prevalence, 1892, a natural decrease of population has been observed in 20 towns. In eight towns, among which are Kazan, Samara, Saratof, and Simbirsk, an excess of deaths over births was observed in five out of the ten years 1887–1896. In the four towns, Astrakhan, Kazan, Saratof, and Simbirsk, the births in that decade numbered 158,687 and the deaths 164,875. A similar decrease has also been observed in some towns in the following governments: Voronezh, Kaluga, Moscow, Tula, St. Petersburg, Tambof, and Yaroslav.

PALERMO: ITS FUTURE AS A HEALTH RESORT.

"THE Golden Shell," as the great Sicilian seaport is picturesquely called, is at present acting as hostess to a number of British medical men, invited by her most prominent citizens to take note of her advantages as a winter resort for the invalid and as the seat of a new sanatorium for the treatment of tuberculosis on the lines proposed by Dr. Cervello, professor of pharmacology in the local university. Her claims to professional notice in both respects—as a winter city and as an advanced post in the "crusade against tuberculosis"—are familiar to our readers. Some years ago a Commissioner specially deputed by THE LANCET contributed to our columns an elaborate account of the many advantages—climatic, meteorological, and topographical—enjoyed by Palermo, and from time to time, in articles entitled "Italy's Opportunity," THE LANCET has indicated how the falling-off, conspicuous these last few seasons, in the favour hitherto shown by the English-speaking world to the French Riviera might be profitably utilised, not only by the Riviera Levante but by the Riviera Napolitana and the Riviera Siciliana. Again, our Rome correspondent[1] was the first to draw attention to the treatment of tuberculosis devised by Professor Cervello—a treatment consisting primarily of medicated inhalations, followed up by special dietetics and by such general therapeutics as the genial Palermitan climate, with its combination of marine and mountain air, is peculiarly fitted to reinforce. So encouraging had this treatment proved in Professor Cervello's hands that several of the most philanthropic of the citizens of Palermo—we may instance the enlightened and liberal Commendatore Florio and his right-hand man in all public-spirited enterprise, the Baron Fassini—founded a sanatorium for its more extended practice. The two undertakings, indeed—the development of the lovely Sicilian seaport as a winter city and the attraction created for her as a centre of expert treatment in pulmonary disease—form the "leit-motif" of the hospitality now extended by the Commendatore Florio and his friends to British medical men.

On their way to Palermo Signor Florio's guests—among whom may be mentioned Sir T. Lauder Brunton, Sir Walter Foster, Professor Clifford Allbutt, and Dr. Patrick Manson—made a brief halt in Rome and, escorted by Dr. Luigi Sambon of the University of Naples, whose connexion with the South Kensington Museum and the London School of Tropical Medicine peculiarly fitted him for the task, visited the chief scientific institutes attached to the Roman University. Interested in the recent work on malaria by Professor Grassi and Professor Celli and Dr. Bignami and Dr. Dionisi, they spent some hours in Professor Celli's Istituto d'Igiene and Professor Grassi's laboratory and then and there initiated reciprocal relations between the Italian "Società per lo Studio della Malaria" and the London School of Tropical Medicine. Another visit of an equally gratifying kind was made to the "clinica chirurgica" of Professor Durante, of the Roman University, where a case of very grave cerebral tumour on which Durante had operated 16 days before by the method associated with his name was seen in full convalescence. Thereafter the guests, under the guidance of Professor Durante, went over the Policlinico, or such portions of the vast building as are now completed. This magnificent edifice, described in

[1] THE LANCET, May 13th and 20th, 1899, pp. 1333 and 1398.

THE LANCET of March 31st, 1894, the creation of Dr. Baccelli, evoked much admiration for its architectural convenience and its unique arrangements for combining clinical with experimental observation and research. A final visit to His Excellency the Minister of Public Instruction (Dr. Baccelli) elicited the most cordial expressions of sympathy between the two medical schools, Italian and British, concluding by Dr. Manson's inviting Dr. Baccelli to participate in person at the opening next May of the London School of Tropical Medicine. His Excellency cordially accepted the invitation, subject, of course, to his having the necessary time at command, and he will, it is understood, not only honour the occasion by his presence, but will enhance the interest of the proceedings by an address on the subject of Malaria, presumably in its clinical aspects. On the next day the visitors left Rome for Naples, whence they embarked for Palermo.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

DURING the week ending Dec. 30th, 1899, 5040 births and 6700 deaths were registered in 33 of the largest English towns. The annual rate of mortality in these towns, which had shown a continuous increase from 18·9 to 27·5 per 1000 in the four preceding weeks, further rose to 30·6 in the week under notice. The rates in the several towns ranged from 17·6 in Huddersfield, 19·4 in Burnley, 20·2 in Cardiff, and 21·3 in Halifax, to 39·3 in Wolverhampton, 39·5 in Preston, 42·1 in Portsmouth, and 49·7 in Plymouth. In London the rate was 35·2 per 1000, while it averaged 26·9 in the 32 provincial towns. The 6700 deaths from all causes in the 33 towns included 524 which were referred to the principal zymotic diseases, against 501 and 578 in the two preceding weeks; of these, 164 resulted from measles, 122 from diphtheria, 102 from whooping-cough, 52 from "fever" (principally enteric), 37 from scarlet fever, 37 from diarrhœa, and 10 from small-pox. The lowest zymotic death-rates were recorded in Croydon, Bristol, Derby, and Birkenhead; and the highest rates in Blackburn, Preston, Sheffield, and Hull. Measles was proportionately most fatal in Salford, Preston, Bradford, Sheffield, Hull, and Newcastle; whooping-cough in Portsmouth, Norwich, Salford, Blackburn, and Newcastle; and "fever" in Plymouth. The mortality from scarlet fever and from diarrhœa was not excessive in any of the large towns. The 122 deaths referred to diphtheria included 58 in London, 18 in Sheffield, six in Leeds, five in West Ham, and five in Manchester. The 10 fatal cases of small-pox in the 33 towns were all registered in Hull, and seven small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday, Dec. 30th, 1899. The number of scarlet fever patients in these hospitals and in the London Fever Hospital was 2881, the numbers having decreased from 3578 to 2916 at the end of the six preceding weeks; 161 new cases were admitted during the week, against 277, 180, and 209 in the three preceding weeks. Influenza was stated to be the primary cause of 193 deaths in London during the week, showing an increase of 124 upon the number in the preceding week. The deaths referred to diseases of the respiratory organs in London, which had been 548, 646, and 968 in the three preceding weeks, amounted in the week under notice to 1172, and were 586 in excess of the corrected average. The causes of 108, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Leeds, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Halifax, and Sheffield.

In 33 of the largest English towns 7145 births and 6870 deaths were registered during the week ending Jan. 6th. The annual rate of mortality in these towns, which had increased from 18·9 to 30·6 per 1000 in the five preceding weeks, further rose last week to 30·9. In London the rate was 37·1 per 1000, while it averaged 26·8 in the 32 provincial towns. The lowest death-rates in these towns were 12·5 in Burnley, 17·2 in Cardiff, 17·6 in Gateshead, and 18·7 in Oldham; the highest rates were 40·5 in Croydon, 40·8 in Nottingham, 42·5 in Preston, and 44·9 in Brighton. The 6870 deaths in these towns included 506 which were referred to the principal zymotic diseases, against 578 and 524 in the two preceding weeks; of these 156 resulted from measles, 121 from diphtheria, 93 from whooping-cough, 55 from "fever" (principally enteric), 40 from scarlet fever, 34 from diarrhœa, and seven from small-pox. No fatal case of any of these diseases occurred last week either in Plymouth or in Gateshead; in the other towns they caused the lowest death-rates in Croydon, Brighton, and Sunderland, and the highest rates in Salford, Preston, Sheffield, and Hull. The greatest mortality from measles occurred in Cardiff, Leicester, Salford, Preston, Huddersfield, Halifax, and Hull; from scarlet fever in Burnley; and from whooping-cough in Portsmouth, Norwich, Liverpool, Bolton, and Salford; the mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. The 121 deaths from diphtheria included 58 in London, 17 in Sheffield, six in Liverpool, five in Leeds, four in West Ham, and four in Leicester. Seven fatal cases of small-pox were registered last week in Hull, but not one in any other of the 33 large towns. There were eight small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday last, Jan. 6th, against five and seven in the two preceding weeks; one new case was admitted during the week, against five and two in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2730, against numbers decreasing from 3578 to 2881 at the end of the seven preceding weeks; 186 new cases were admitted during the week, against 180, 209, and 161 in the three preceding weeks. Influenza was certified as the primary cause of 316 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had increased from 324 to 1172 in the seven preceding weeks, further rose last week to 1221, and were 558 above the corrected average. The causes of 99, or 1·4 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Leicester, Bolton, Newcastle, and in seven other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In eight of the principal Scotch towns the annual rate of mortality, which had been 20·0, 21·5, and 22·6 per 1000 in the three preceding weeks, further rose to 27·2 during the week ending Dec. 30th, 1899, and was 3·4 per 1000 below the mean rate during the same period in the 33 large English towns. Among these Scotch towns the death-rates ranged from 20·2 in Leith and 22·6 in Aberdeen to 34·2 in Greenock and 41·2 in Paisley. Of the 829 deaths in these towns 31 were referred to measles, 17 to whooping-cough, 17 to diarrhœa, seven to scarlet fever, seven to diphtheria, and six to "fever"; in all, 85 deaths resulted from these principal zymotic diseases, against numbers increasing from 69 to 84 in the three preceding weeks. The zymotic death-rate in these towns averaged 2·8 per 1000, being 0·4 above the mean rate during the week from the same diseases in the 33 large English towns. The 31 fatal cases of measles showed a decrease of six from the number in the preceding weeks, and included 19 in Glasgow, and three each in Dundee, in Paisley, in Greenock, and in Perth. The deaths from whooping-cough, which had been 18 and 12 in the two preceding weeks, rose again in the week under notice to 17, of which 11 were registered in Glasgow. The fatal cases of diarrhœa, which had decreased from 20 to 14 in the three preceding weeks, rose again to 17 during the week, and included four in Glasgow, four in Dundee, and four in Greenock. Of the seven deaths from scarlet fever four were recorded in Glasgow, where four of the six fatal cases of "fever," were also registered. The deaths referred to diphtheria, which had been two and three in the two preceding weeks, further rose during the week to seven, and included three in Glasgow, and two in Edinburgh. A marked increase in the mortality from diseases of the respiratory organs occurred, 253 deaths from these diseases being registered, showing an excess of 70 over the number in the preceding week and more than twice the number in the corresponding period of last year. The causes of 49, or nearly 6 per cent., of the deaths in these eight towns in the week under notice were not certified.

The annual rate of mortality in the eight Scotch towns, which had increased from 20·0 to 27·2 per 1000 in the four

preceding weeks, declined again to 25·6 during the week ending Jan. 6th, and was 5·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·6 in Leith and 18·5 in Perth to 30·0 in Greenock and 35·2 in Paisley. The 792 deaths in these towns included 27 which were referred to measles, 17 to diarrhœa, nine to whooping-cough, six to scarlet fever, three to diphtheria, and two to "fever." In all 64 deaths resulted from these principal zymotic diseases, against numbers increasing from 69 to 85 in the four preceding weeks. These 64 deaths were equal to an annual rate of 2·1 per 1000, which was 0·2 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had been 37 and 31 in the two preceding weeks, further declined to 27 last week, and included 20 in Glasgow, four in Paisley, and two in Greenock. The deaths from diarrhœa, which had been 14 and 17 in the two preceding weeks, were again 17 last week, of which eight were registered in Glasgow, four in Dundee, and two in Edinburgh. The fatal cases of whooping-cough, which had been 12 and 17 in the two preceding weeks, declined again to nine last week, and included six in Glasgow and two in Aberdeen. The deaths from scarlet fever, which had been eight and seven in the two preceding weeks, further declined last week to six, of which four occurred in Glasgow, where the two fatal cases of "fever" were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 128 to 253 in the six preceding weeks, declined again to 236 last week, but were 113 above the number in the corresponding period of last year. The causes of 33, or more than 4 per cent., of deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been 38·2 and 42·5 per 1000 in the two preceding weeks, declined again to 41·8 during the week ending Dec. 30th, 1899. The death-rate in the city during the four weeks ending on that date had averaged 40·3 per 1000, against an average rate of 27·8 in London and 19·8 in Edinburgh. The 280 deaths registered in Dublin during the week under notice were 5 below the number in the preceding week; of these, 22 resulted from the principal zymotic diseases, the numbers having declined from 72 to 38 in the six preceding weeks. These 22 deaths included 15 which were referred to measles, two to whooping-cough, two to "fever," one to scarlet fever, one to diphtheria, and one to diarrhœa. The zymotic death-rate was equal to 3·3 per 1000, the death-rate from the same diseases being 2·1 in London and 0·9 in Edinburgh during the same period. The fatal cases of measles, which had been 23 and 24 in the two preceding weeks, declined again to 15 during the week. The deaths from whooping-cough, which had been three and two in the two preceding weeks, were again two. The two fatal cases of "fever" showed a slight decline from the number in the preceding week. The mortality from scarlet fever corresponded with that in each of the three preceding weeks, while the deaths from both diphtheria and diarrhœa were less than they had been in any recent week. Of the 280 deaths in Dublin during the week 45 were of infants under one year of age and 92 of persons aged upwards of 60 years, the deaths of infants and of elderly persons being respectively nine and 17 in excess of the numbers in the preceding week. Eight inquest cases and seven deaths from violence were registered, and 89, or nearly a third, of the deaths occurred in public institutions. The causes of 28, or 10 per cent., of the deaths the city in the week under notice were not certified.

The death-rate in Dublin, which had been 42·5 and 41·8 per 1000 in the two preceding weeks, rose again to 50·3 during the week ending Jan. 6th. During the thirteen weeks ending Saturday last the death-rate in the city averaged 38·2, the rate during the same period being 22·8 in London and 18·6 in Edinburgh. The 337 deaths registered in Dublin during the week under notice were 57 in excess of the number in the preceding week, and included 18 which were referred to the principal zymotic diseases, against 38 and 32 in the two preceding weeks; of these, 10 resulted from measles, five from "fever," two from diarrhœa, one from whooping-cough, and not one from either small-pox, scarlet fever, or diphtheria. These 18 deaths were equal to an annual rate of 2·7 per 1000, the zymotic death-rate during the same period being 2·1 in London and 0·3 in Edinburgh. The fatal cases of measles, which had been 24 and 15 in the two preceding weeks, further declined to 10 last week. The deaths referred to different forms of "fever," which had been two, three, and two in the three preceding weeks, rose again last week to five. The fatal cases of diarrhœa, which had been five and one in the two preceding weeks, rose again to two last week. The mortality from diphtheria showed a decline from that recorded in recent weeks. The 337 deaths in Dublin last week included 47 of infants under one year of age and 119 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons were in excess of those recorded in any recent week. Seven inquest cases and four deaths from violence were registered, and 102, or nearly a third, of the deaths occurred in public institutions. The causes of 19, or nearly 6 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

EMENDATIONS IN THE ROYAL NAVY MEDICAL SERVICE.

WITH a view of obtaining the best surgical skill in our naval hospitals we understand that the Board of Admiralty have decided that a larger proportion of promotions to the rank of Deputy Inspector-General of Hospitals and Fleets shall be made by special selection with reference to this most important part of the duties of these officers.

We are also glad to learn that in future a Surgeon in the navy will attain to the rank of Fleet Surgeon after a period of 20 years in the service instead of after 20 years of full pay service as has previously been the rule.

ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified:—Surgeons: H. Spicer to the *Duke of Wellington;* M. Cameron to the *Northampton*, for the *Curacoa;* F. C. B. Gittings to the *Mars;* G. E. Macleod and R. J. Mackeown to the *Europa;* and George A. S. Bell, to be lent to assist the Board of Army and Medical Officers in the physical examination of candidates for commissions in the Royal Marines; Fleet Surgeon S. Keays to the *Ramillies*.

ROYAL ARMY MEDICAL CORPS.

Captain G. A. T. Bray, from the Seconded List, to be Captain, vice M. L. Hughes, killed in action. Major F. J. Morgan has embarked for South Africa. Lieutenant-Colonel W. W. Kenny is appointed to the charge of No. 5 Stationary Hospital for South Africa.

INDIA AND THE INDIAN MEDICAL SERVICES.

Major D. G. Crawford, Officiating Civil Surgeon of the 24-Parganas, is allowed furlough for one year and six months. Lieutenant-Colonel T. Grainger, Officiating Civil Surgeon of Darbhunga, is allowed furlough for two years. Captain H. M. Earle, Resident Medical Officer, Medical College Hospital, Calcutta, is appointed to act as Civil Surgeon of Shahabad during the absence on leave of Lieutenant-Colonel W. Flood Murray until further orders. Captain H. J. Walton is appointed to act as Resident Medical Officer, Medical College Hospital, Calcutta, during the absence on deputation of Captain H. M. Earle until further orders. The services of the undermentioned officers are replaced at the disposal of the Military Department:—Major A. E. S. Searle, 14th Bombay Infantry, and Captain E. G. R. Wilkins, 14th Bombay Infantry. The services of Lieutenant H. H. Sproule, 1st Bengal Lancers, are replaced at the disposal of the Military Department. The services of Captain A. P. Bateman-Champain, 2nd Battalion, 3rd Gurkha Rifles, are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh for employment on plague duty. The services of Major A. R. W. Sedgefield (Bengal) are placed temporarily at the disposal of the Government of the North-Western Provinces and Oudh. The services of Lieutenant F. P. C. Kelly, 1st Bombay Infantry, are replaced at the disposal of the Military Department. Lieutenant-Colonel B. M. Blennerhassett, R.A.M.C., to officiate on the Administrative Medical Staff of the Army with the temporary rank of Colonel.

VOLUNTEER CORPS.

Artillery: 1st Ayrshire and Galloway: Surgeon-Captain D. Lawrie resigns his commission. 3rd Lancashire: Surgeon-Lieutenant-Colonel A. A. Corte resigns his commission, with permission to retain his rank and to wear the uniform of the corps on his retirement. *Rifle:* 1st Volunteer Battalion the Northumberland Fusiliers: Thomas Woodman to be Surgeon-Lieutenant. 1st Volunteer Battalion the Royal Warwickshire Regiment: Alexander Henry McDougall to be Surgeon-Lieutenant. 1st Volunteer Battalion the Lincolnshire Regiment: Thomas Walter Alfred Daman to be Surgeon-Lieutenant. 1st Volunteer Battalion the Essex Regiment: Arthur Butler Harris to be Surgeon-Lieutenant.

VOLUNTEER INFANTRY BRIGADE.

Forth: Surgeon-Lieutenant-Colonel C. W. MacGillivray, the Queen's Rifle Volunteer Brigade the Royal Scots, to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade and to be seconded whilst holding the appointment.

TRANSVAAL WAR NOTES.

Mr. Langman, the treasurer of the Portland Field Hospital, has offered to equip a similar hospital entirely at his own expense. This offer, which may eventually cost Mr. Langman £15,000, has been accepted, and the donor's son (Lieutenant Langman) has been appointed treasurer and ordnance officer. Dr. Conan Doyle will act as medical secretary and registrar and Mr. Robert O'Callaghan as chief surgeon. Three other medical men will also be appointed on the staff of the hospital and on its arrival on the lines of communication a major of the Royal Army Medical Corps will be placed in charge for details, &c. It is expected that the hospital will be completed in time to start for South Africa early next month.

A hospital for the use of the Imperial Yeomanry in South Africa is in course of organisation by a committee of ladies in conjunction with the Princess of Wales. The total sum received in aid of this scheme now exceeds £13,500. Towards this amount the Prince of Wales gave £100 and the Duchess of York £25. Mr. A. D. Fripp has been appointed chief surgeon to the Imperial Yeomanry.

We learn that a "flying hospital"—i.e., a car fitted with operation case, splints, dressings, and a small supply of drinkable water—has been devised by Dr. Horace Manders. The car is drawn by two horses, can keep up with cavalry, and can go anywhere that horse artillery can go. It is intended that one of these cars should accompany the Imperial Yeomanry regiment which is just upon the point of starting. The cost will be raised by subscription.

As we announced last week, Sir William Thomson has been appointed one of the chief surgeons to Lord Ivesagh's Irish Hospital. He will, we understand, be accompanied by Mr. George Stoker. Mr. A. R. Friel will take charge of the Roentgen ray apparatus. Captain W. T. Mould, R.A.M.C., is the officer selected by the War Office for attachment to the hospital for administrative purposes.

Surgeon-Major E. L. Freer (Army Medical Reserve) and Surgeon-Captain W. P. Whitcombe, both of the 1st Volunteer Battalion Royal Warwickshire Regiment, have placed their services at the disposal of the War Office and have been accepted for service in South Africa.

DEATHS IN THE SERVICES.

Inspector-General of Hospitals and Fleets Garland William Langdon Harrison, on Dec. 30th, at "Hilton," Newton Abbot, Devon, from pneumonia following an attack of influenza. The deceased, who was 62 years of age at the time of his death, was the son of the late Dr. G. F. B. Harrison of Devonport and took the qualifications of M.R.C.S. and L.S.A. in 1858 and 1869 respectively. He entered the Royal Navy as surgeon in the former year and retired with the rank of inspector-general of hospitals and fleets in December, 1893.

Deputy-Surgeon-General David Cullen, on Jan. 4th. He served with the Army Medical Department from 1854 to 1869, with the 4th Light Dragoons, the 3rd Battalion Rifle Brigade, and the 17th Lancers. He was present at the siege and fall of Sebastopol and with the cavalry expedition to Eupatoria (medal and clasp and Turkish medal). He also received the medal and clasp for services during the Indian Mutiny, having been present at the final capture of Lucknow and in other operations.

Deputy Inspector-General of Hospitals Robert Hay, of the Royal Naval Hospital, Bermuda, on Dec. 2nd, aged 58 years. He became surgeon in 1863, staff-surgeon in 1877, fleet-surgeon in 1883, and attained the rank of deputy inspector-general in 1894.

At the quarterly meeting of the directors of the Naval Medical Supplemental Fund, held on Jan. 9th, Inspector-General W. H. Lloyd in the chair, the sum of £70 was distributed among the several applicants.

HOSPITAL ABUSE AT DUBLIN.

(FROM OUR SPECIAL COMMISSIONER.)

SOME members of the medical staff of the Children's Hospital, Temple-street, Dublin, have recently resigned because new rules and regulations have been imposed "to which no self-respecting member of the profession can submit." Such, at least, are the words used by the medical men concerned, and on inquiry these terms seem to be fully justifiable. The hospital in question was founded in 1872, and, as usual under the circumstances, was governed by a managing committee on which the medical staff was represented. The members of the medical staff were appointed for five years, with the right of being re-elected. This rule, however, was never applied. At the expiration of the five years no re-election took place: all the members of the medical staff continued in attendance. Thus from the very beginning a precedent was established by which this rule was left in abeyance. For instance, the actual senior consulting physician has been on the staff of the hospital since its foundation and yet he has never been formally re-elected. That the rule in regard to such re-elections should have remained in abeyance is perhaps to be regretted. There is a feeling in various parts of the country that hospital staffs should be changed more frequently; that there is a tendency to monopolise such appointments, and this deprives the younger members of the profession of chances of advancement. However this may be, that is not the point in dispute; and, in regard to the present difficulty, it is only necessary to bear in mind that, whether wisely or not, it has not been the custom at this particular hospital to re-elect the members of the medical and surgical staff. Of far greater importance, especially to the general public, is the fact that, when first established, the Dublin Children's Hospital was declared to be an unsectarian institution. Subscriptions were obtained from Protestants as well as from Roman Catholics; and, this being the case, the Corporation of Dublin was justified in voting a subvention to the hospital. It is true that no Protestant was appointed on the medical or surgical staff; but this might have been explained on the ground that Roman Catholics are in the majority and did not necessarily imply a spirit of sectarian intolerance.

In the course of time, however, a Roman Catholic congregation known as the Order of the Sisters of Charity took over the entire management of the hospital. It is difficult to understand how this can possibly have been done. Undoubtedly the subscribers are themselves not free from blame or they would not have quietly submitted to such an act of usurpation. Having once succeeded in their *coup d'état*, the sisters proceeded to govern the hospital as absolute autocrats, and one of their first acts was to silence the medical staff, which had no longer a voice on the board of management, for this board was abolished. The subscribers were also treated in an equally cavalier manner and they have now nothing whatsoever to say in regard to the management and control of the hospital. Further, these sisters have actually taken upon themselves the responsibility of appointing medical men to the staff whenever a vacancy occurred. Yet there is no guarantee that they possess the technical knowledge necessary for such a selection. But if they possess no technical knowledge, and if they have usurped their functions, one thing is very certain—they possess very great influence and power of patronage. Thus it required more than ordinary moral courage, and perhaps also independent means of existence, for a medical man to venture upon a protest. Like the original founders of the hospital, the sisters also established a rule for the appointment of the staff, which they likewise failed to enforce. The sisters' rule was that the members of the medical and surgical staff

should be appointed for three instead of five years as formerly, but it was generally understood that this was a mere matter of form, and that the question of re-appointments would not be raised. As a matter of fact, this question was not brought forward till quite recently, and some of the members of the staff have held appointments under this three years' rule now for six years, and the question of their re-appointment was not raised at the termination of the first three years. Thus it is claimed that the medical staff are justified in considering that this rule is in abeyance.

What with the apathy of the subscribers, the ignorance of the general public as to what was going on, and the timidity of the members of the profession, who stand in terror before the sisters lest a boycott should be organised against them, things might have gone on peacefully for some time longer. Recently, however, a difficulty arose between the sisters and the nursing staff. Members of the medical staff protested that a nurse had been unfairly treated; but the sisters will brook no criticism. Their ideal is passive obedience, so on Nov. 4th last the superioress of the sisters of charity in charge of the hospital wrote to the honorary secretary of the medical staff to the effect that "all members of the staff held their posts at the will of the sisters of charity," and that if they wished to be re-appointed it would be necessary for them to sign the following form:—

"I hereby accept the office of —— in the Children's Hospital for a period of three years from (date), and I undertake to fulfil the duties of that office and to hold it only as long as I comply with the rules and regulations made from time to time by the sisters of charity, who are the governing body of this hospital."

The medical staff on receipt of this letter naturally objected to the enforcement of limited terms of appointment, and this for the reasons explained above. But, and this is far more important, they saw in the sudden enforcement of a rule which had been in abeyance ever since the existence of the hospital a deliberate act of intimidation. They concluded that this was an attempt directed against the independent discharge of their duties to the patients. It was also an attempt to make the medical staff recognise in writing that the sisters were the governing body of the hospital and that they had a right to establish rules and regulations for the government of the medical staff. Thus, if at any time the subscribers entered a protest and claimed their right to control, the medical staff, as well as the sisters, would be compromised in the act of usurpation. But the sisters were careful not to give the medical staff time to consider fully their position and responsibilities. The letter of the superioress was written on a Saturday, and it was expressly stated that the answer must be forthcoming on the following Tuesday. The staff unanimously protested. So far there was no division of opinion; but when it came to the question of acting up to the opinions expressed only two members of the medical staff had the courage to refuse their signatures and to resign. These two physicians, who hold eminent positions in Dublin, were thereupon replaced by two junior physicians who are engaged in club practice. The members of the surgical staff submitted and signed the declaration imposed upon them by the sisters.

The matter will not rest here. The nurse whom the medical staff tried to shield from what appeared to be an act of gross injustice will probably take legal proceedings and the whole of this scandal will be laid bare. Then, perhaps, the subscribers will want to know what has been done with their money and how far the promise that the hospital should be unsectarian has been kept. But if the subscribers with whose money a hospital is brought into existence and maintained have an undoubted right to control the expenditure, the medical staff who subscribe in kind, by reason of the work they do, have an equal right to a voice in the management. The union of the East London and suburban medical practitioners have a rule, which they have been able to enforce in at least one instance, to the effect that 25 per cent. of the seats on the board of management of hospitals should be occupied by members of the medical staff of the hospital. Evidently the Dublin practitioners should also form a union by which they could obtain not merely proper representation on the management boards of the hospitals, but they would have an organisation to protect them against the mortal terror of the boycott which seems to paralyse individual members of the profession. While it is thus imperatively necessary that medical men should act in this manner if they mean to maintain their individual independence and the dignity of their profession the public at large should also insist on their rights. It is not only the subscribers to the Children's Hospital who have just cause of complaint, but every ratepayer in Dublin has a right to know what is being done in their hospitals. The Dublin Corporation subsidises this hospital, that is to say, it gives the ratepayers' money to the hospital, and the ratepayers comprise persons of all denominations, Christians and non-Christians, Jews and Protestants, as well as Roman Catholics. If the latter want a hospital to be controlled solely by the Order of the Sisters of Charity then let them collect the money required from Roman Catholics only and not accept grants from the public funds or subscriptions from Protestants. And, again, whatever respect may be due to the sisters of charity for the good work which they attempt to perform, what technical qualifications do they possess that they should take upon themselves the management of a hospital? What right have they to impose rules on the medical staff which in some instances are, in respect to the hours of attendance, very irksome? It may be objected that a lay board of management is not better informed technically, but that is precisely why the organised members of the profession have insisted that the medical staff, which is technically competent, should have a large share of representation on boards that manage hospitals. Then, again, if a lay board of management commits errors or wastes money—and this it must be acknowledged often occurs—they have at least a constitutional right to exist, they are elected by those who pay, and if matters are not properly managed the subscribers are free to elect other more skilful administrators. But the sisters of charity escape all control. They have, of course, their ecclesiastical superiors, but these latter do not represent the subscribers any more than do the sisters themselves, nor do they possess any better technical qualifications. Under such a system, screened as it is from all public control, investigation, or criticism, every form of abuse is possible. And this cuts both ways; for, if abuse can be committed and escape detection, it is also possible that accusations of abuse may be brought forward which are false, but the secrecy of procedure renders an effective defence or refutation difficult. However, it is not necessary to insist that experience has proved that publicity is the best guarantee of purity; and any attempt to usurp functions and to escape from criticism is quite contrary to the spirit of the age.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Special Training for Officers of the Indian Medical Service.—Infected Plague Areas in India.—The Progress of the Epidemic.—The General Mortality of Bombay and Calcutta.

WITH a view to securing a succession of officers highly trained in bacteriological work the Government of India, with the concurrence of the Secretary of State, has decided that a selected officer of the Indian Medical Service shall always be attached to the medical school at Netley for the purpose of undergoing training. The selection will ordinarily be limited to officers who have completed the prescribed time of military duty, and while on furlough have devoted at least a year to the systematic study of bacteriology and pathology or bacteriology and hygiene in a recognised school in Great Britain or on the Continent, and the selected officer will be attached to the Netley Medical School for one year, to be extended under certain circumstances to two years during which he will be granted extra leave, which will count as service in India on the pay and allowances admissible to him on ordinary furlough, and he will retain a lien on his Indian appointment.

A highly interesting experiment on the lines of Major R. Ross's investigations into the question of mosquitoes and malaria is about to be tried in Calcutta. Mr. J. Nield Cook has suggested to the chairman of the municipality that two men should be employed in Calcutta and the neighbourhood, under the supervision of a health officer, to hunt out the breeding-places of anopheles claviger, or the malaria mosquito, and destroy the larvæ with kerosene oil or permanganate of potash.

The following areas in India are still declared as plague infected:—(1) the Bombay Presidency, including Sind; (2) the Bellary, Salem, and Coimbatore districts of Madras;

(3) Calcutta and the Saran and Howrah districts of Bengal; (4) the Nagpur division of the Central Provinces; (5) the Mysore State, including Bangalore; (6) the Hyderabad State; and (7) the Hoshiapur district of the Punjab. Plague mortality is going up slightly in Bombay city and a slight recrudescence is reported in the Jullunder district of the Punjab, but everywhere else in India it continues to decrease. The total number of deaths from plague during the week ending Dec. 2nd was 1576, against 1946 in the preceding seven days. Calcutta returns 56 deaths, Saran district 13 cases and two deaths, Bombay city 159 deaths, Karachi two deaths, the rest of the Bombay Presidency 1159 deaths, Madras Presidency 10 deaths, the Punjab nine deaths, the Central Province 16 deaths, and Mysore State 166 deaths. In Bombay city, however, while the official returns indicate but a slight increase of plague the general mortality has been rising rapidly and ominously. There has been a rise of 90 deaths during the past week—viz., from 959 to 1049. The average weekly mortality is about 600. It is curious to note that last year plague became epidemic (100 deaths a week) in the third week of November. Nearly the same thing occurred again this year, the week's record being 135. An unusual occurrence at this time of the year is the prevalence of measles and small-pox, but these only account for 18 and 15 deaths respectively. Dysentery and diarrhœa account for some of the increased mortality, but it is tolerably certain that undiscovered plague is responsible for the greater part.

In Calcutta also there has been an ominous rise in the general mortality but the number of deaths from plague reported continues about the same. The death-rate is 37·1 per 1000 per annum against 34·7, the mean of five years. Attempts are made in the local press to throw doubt on the existence of plague and to question the returns of the plague staff. It is true that comparatively few cases are seen during life but investigations indicate approximately the amount which still continues. There is a tendency everywhere to conceal deaths from plague. In addition to the deaths returned as due to plague there still continue to be a large number of suspected cases.

The long-disputed question about typhoid fever affecting the natives of India is almost settled. More exact observations than were formerly taken show that the disease, although not nearly so common as in the European population, does nevertheless exist among them. I pointed out some time ago that the disease is not only milder in character, but is characterised by the less-marked development of abdominal symptoms. It is very probable that typhoid fever has been in existence in India for very many centuries and that a great evolutional immunity has been effected by the elimination of those susceptible to it. This question of racial immunity by previous experience applies probably to nearly all diseases, and I have also previously pointed out the mortality and incidence of certain diseases affecting the British as compared with the native troops to illustrate this argument. The reports of the younger medical officers of the Indian Medical Service indicate that enteric fever is more common than is generally supposed while the senior officers seem to think it very rare or almost unknown. In this connexion it is interesting to note the large number of deaths which take place in a city like Calcutta after from 15 to 30 or more days of fever. Few of these cases come under accurate observation and when they do they are generally labeled remittent fever. The statistics of the gaols of India show 21 cases of enteric fever with seven deaths for 1896, and 34 cases with 15 deaths for 1897. As these cases have all been verified by post-mortem examination the figures are particularly trustworthy. They are undoubtedly very small compared with the immense gaol population, but then it is probable that a large number of mild cases passed unrecognised. The same thing applies to men serving in the native army.

Calcutta, Dec. 14th, 1893.

NEWPORT WATERWORKS.—The total expenditure by the Newport (Mon.) Corporation on the Wentwood Waterworks Scheme up to the present has been £188,508.

VACCINATION FEES.—At the meeting of the Tetbury Board of Guardians held on Jan. 3rd it was decided that the public vaccinator (Mr. W. Wickham) should receive 5*s.* for each successful vaccination in Tetbury and 7*s.* 6*d.* in rural parishes.

Correspondence.

"Audi alteram partem."

THE LATE SIR JAMES PAGET.

To the Editors of THE LANCET.

SIRS,—You have alluded to the great consideration which Sir James Paget always displayed towards those whom he met in consultation. Many years ago an instructive illustration of this came under my notice. I was seeing a patient suffering from, I think, some form of paralysis, but without any "surgical" feature, with an old practitioner in a southern suburb. He said that a month before he had got Sir James Paget to see the patient with him, and added in a half-apologetic way, "I always call in Paget whenever I can, because I know that, whatever the case is, the patient is safe and I am safe."—I am, Sirs, yours faithfully,

Queen Anne-street, Jan. 5th, 1900. W. R. GOWERS.

BORIC ACID IN FOOD.

To the Editors of THE LANCET.

SIRS,—Dr. Liebreich, in THE LANCET of Jan. 6th, makes a communication in which he assumes that an erroneous conclusion was arrived at in attributing serious illness to five individuals and the death of five fowls to the use of boric acid, which had been added as a preservative to the food consumed. Dr. Liebreich's assumption is based upon an experiment of giving boric acid in definite quantities to eight fowls without the manifestation of illness amongst them. In a subsequent paragraph, however, when criticising Dr. Annett's investigations, he says, in reference to the same: "All that these experiments prove is already known—viz., that animals finally succumb under the repetition of large doses."

Now this admission utterly destroys the value of Dr. Liebreich's experiment for the purpose of argumentative disproof of the toxic effects of boric acid in the cases I narrated. "Large doses" were unintentionally given in the preservative added to the food, and, further, the fowls that took most died, whilst those which devoured less recovered. But Dr. Liebreich himself evidently does not consider his experiment sufficiently convincing, because he has recourse to various suggestions to account for the results otherwise than by boric acid. In reference to some of these suggestions I may say that although the symptoms were very typical of poisoning by large doses of boric acid, including suppression of urine, &c, the desirability of considering other causes was not overlooked, and amongst other poisons, one of the most likely toxic bodies to be present in milk—viz., tyroxicon—was especially searched for but with negative results. On the other hand, large quantities of boric acid were found by the borough analyst in the crop and gizzard of one of the fowls. Boric acid was also found in the milk supplied by the dairyman and in the glacialene which the cook added to the milk. Add these facts to the admission of Dr. Liebreich—viz., "That it is known that large doses prove fatal to animals"—and I fail to perceive the error with which Dr. Liebreich taxes me. I ought to add, as Dr. Liebreich refers to vanilla, that this flavouring agent was used by the cook, but I am unaware of any poisonous effects which have been traced to this article when supplied in a pure state. With regard to "alarming the world," I sent no communication to the lay press on the subject, but simply brought the question before a meeting of the East Kent Medical Society for discussion and put the facts on record in my annual report. I trust that Dr. Liebreich does not attribute to me any desire for sensational publicity.

I am, Sirs, yours faithfully,

M. K. ROBINSON, M.D Erlang.,
Dover, Jan. 9th, 1900. Medical Officer of Health, East Kent.

"A CASE OF HÆMORRHAGIC ASCITES."

To the Editors of THE LANCET.

SIRS,—Since writing the account of the case which appeared in THE LANCET of Jan. 6th (p. 17) under this title there has been a case in the post-mortem room of the Bristol Royal Infirmary which presented some similar features. No

ascites was present, but there was intense congestion of the intestines over precisely the same area—that is to say, all the small intestine below the duodenum was affected, together with the ascending colon. The duodenum, the transverse colon, and the large intestine below it were quite free from congestion. Hæmorrhage had taken place into the small intestine, but the fæces in the large intestine were not mixed with blood. The veins of the mesentery were not distended as in the former case. The superior mesenteric vein and artery were free from all trace of ante-mortem thrombosis. The other abdominal organs were quite healthy, but the lymphatic glands in the mesentery were much enlarged. The heart and lungs were healthy. The case was that of a boy, aged four years, who was twice admitted under the care of Dr. Shaw during the space of three weeks. On the first occasion there was considerable abdominal distension with constipation. At the end of about a week, however, he left the infirmary apparently quite well, but was re-admitted three days before death complaining of pain in the back and in the abdomen. The facial expression was that of great collapse. He vomited occasionally, and the bowels were obstinately constipated, but the abdominal distension had not returned. The bowels had not been moved at the time of death.

As already mentioned, the area of congestion of the intestines was precisely the same in both instances. Although in both the congestion in great measure corresponded to the distribution of the mesenteric artery and vein, it did not do so absolutely, since in neither case the transverse colon showed congestion. The absence of thrombosis in the second case is interesting and suggests that the thrombosis in the small vessels of the liver in the first case was of secondary importance. Dr. H. D. Rolleston[1] refers to cases of intestinal hæmorrhage which suggest vascular occlusion, yet no such blockage can be found. He considers that these cases are possibly allied to the peritoneal sanguineous cysts, records of several cases of which I have collected and published in the Guy's Hospital Reports.

I am, Sirs, yours faithfully,

THEODORE FISHER.

"SOME POINTS IN LIFE ASSURANCE EXAMINATIONS."

To the Editors of THE LANCET.

SIRS,—I am glad to see from the letter by Dr. H. Crosby in THE LANCET of Dec. 30th, 1899, that he can name some few life assurance companies which have a question directly bearing upon suppurative ear disease. I was not unaware that a certain proportion paid attention to this detail. Those, however, who read my communication in THE LANCET of Dec. 16th will have seen that my chief point was the absence of any question regarding the temperature, whereas all offices require definite information regarding the pulse-rate. In the cases I quoted it was the slight rise in temperature which led me to postpone them, when in the one case suppurative ear trouble (fatal 10 days later) was discovered and in the other incipient phthisis. I am unaware of any company having a question printed regarding temperature, an omission which, in my humble opinion, is of vital importance. I am, Sirs, yours faithfully,

FRANCIS TAYLOR SIMSON.

Northumberland-avenue, W.C., Jan. 8th.

DIPHTHERIA AND MILK-SUPPLY: A FILTHY HABIT.

To the Editors of THE LANCET.

SIRS,—We all from time to time meet with cases of diphtheria where there seems complete proof that the infection has been conveyed by means of milk. In many cases where no association of the milk with a case of diphtheria can be proved this is attributed to infection from a disease in the cow caused by the same organism as human diphtheria. It seems to me possible that a habit I have noticed among milkers in country places may in many cases offer a simpler solution of the problem. Recent research has brought to light the fact that a micro-organism not to be distinguished from the Klebs-Löffler bacillus is to be found inhabiting the throats of many persons apparently in their usual health and pursuing their usual avocations. Old-fashioned milkers, specially old yardmen in country places, often moisten their hands with saliva before seizing the teats instead of moistening them with the first drawn drops of milk. It seems to me more than probable that by this means the bacillus of diphtheria may be conveyed from the throat of the milker to the milk. My attention was first drawn to this habit about two years ago on a farm in the East of England where an old yardman when giving me a lesson in milking directed me to begin operations thus. I have since found that this is quite a common custom, though it may be omitted when a visitor is present at the milking. I have never seen this point touched on, though it seems to me worthy of some attention. We are at this present time apt always to look to disease in the cow as the source of infection, though the connexion between disease in the cow and these cases of milk-borne diphtheria is often far from clear.

I am, Sirs, yours faithfully,

ETHEL M. N. WILLIAMS, M.D. Lond., D.P.H. Cantab.

Newcastle-upon-Tyne, Dec. 27th, 1899.

[1] System of Medicine, Allbutt, vol. iii., p. 715.

"DEATHS UNDER CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 4th, 1899, p. 1227, appears an article by Dr. J. M. Atkinson and Mr. J. Bell giving details of two cases of death under chloroform which seems to call for remark. It will scarcely be disputed that these deaths were not merely accidental concomitants of chloroform administration, but were actually due to the drug, in the sense that they would not have occurred had not chloroform been given. The points of interest appear to fall into two groups—first, those connected with the method of administration, and secondly, those connected with the cause of death. The instrument of administration was in one case a Krohne and Sesemann's inhaler and in the other a Skinner's mask. It is to the use of the former that I wish to draw attention particularly. Two deaths have recently been reported in THE LANCET as occurring when chloroform was given through this inhaler, and Dr. James Edmunds has in recent numbers written on the subject pointing out that it is perfectly easy to kill a man with chloroform out of a Krohne's inhaler. It cannot be too strongly insisted on that by no merely mechanical means can chloroform be given with safety.

A Krohne's inhaler seems to have this advantage—that the wastage of chloroform is minimal, so that most of the choloroform evaporated is absorbed into the circulation, and as a result of this the amount circulating in the blood is fairly accurately known. But to give chloroform or any other drug with safety one wants to know not the amount circulating in the blood but the effect which it is having on the tissues. Accurate dosage does not obviate the necessity of looking carefully for symptoms of danger resultant on the administration of the drug, symptoms which will arise with whatever accuracy of dosage the drug is given. In one of the cases under consideration the very use of the inhaler seems to have introduce a new element of danger. We are told that the patient gasped, the inhaler was removed, and she was discovered to be cyanosed. It cannot be doubted that the cyanosis had not been produced that instant, but the inhaler seems to have covered the face so that the cyanosis escaped notice till it was too late to combat it. If the use of the inhaler means any relaxation of vigilance in the search for symptoms of danger, it can do nothing but incalculable harm, and at its best it is little more than an economiser of chloroform.

As regards the cause of death in these two cases, as is usual the immediate impulse is to fix on the heart as the organ primarily implicated. In one case the opinion is definitely formulated that "the cause of death ..... appears to have been due to the action of chloroform on the cardiac ganglia paralysing them, they being in an abnormal state of susceptibility from some undefined cause"—an opinion for which there is not the slightest shred of evidence adduced. In the other case the report shows that the mind turned to the possibility of fatty degeneration of the heart, but this was found to be absent. Yet in both of these cases the description brings out strongly a common symptom pointing to the respiration as the means by which death was produced—I refer to cyanosis. Can cyanosis ever be compatible with primary heart failure? What does cyanosis mean but that capillaries and venules are distended with deoxygenated blood? If the heart fails primarily how can it drive the

blood into the capillaries and veins with sufficient force to distend them? The cardinal sign of heart failure is pallor due to the capillaries and veins being empty owing to the heart's beat not being sufficiently powerful to drive blood into them. Cyanosis means a heart of some vigour and is incompatible with primary heart failure. In these cases of death under chloroform I know of no cause for cyanosis other than obstructed respiration. In both of these cases the first sign of danger noticed was abnormal respiration and the patients died from asphyxia. Obstructed respiration or asphyxia has its well-known stages—the stage of cyanosis or strongly beating heart and the stage of pallor or heart failure. If one considers that in asphyxia death occurs from heart failure, then one may consistently say that that was the event in these cases. The conditions are identical. Still, in both stages if the initial obstruction can be prevented death will not occur. The lessons to be learnt from these two deaths under chloroform are the usual ones: first, not to give chloroform by rule of thumb whether through an inhaler or not, but to be guided entirely by the symptoms produced; and, secondly, to keep the respiration normal both as regards regularity and free air entry. With these precautions chloroform may be given with safety.—I am, Sirs, yours faithfully,

CLAYTON LANE, M.D. Lond.,
Lieutenant, I.M.S.,
Camp Grinburn, Mishmi Field Force, Dec. 8th, 1899.

SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID FUND.

To the Editors of THE LANCET.

SIRS,—I shall be glad to be afforded the opportunity of making an appeal in your columns on behalf of those sick and wounded officers of all services whose means are inadequate to secure that efficient medical and surgical treatment which will often be needed to restore to them, after their return home, the health they have sacrificed in the service of their country.

Amongst the great number of officers who have unhappily been wounded or are suffering from disease contracted on service there will certainly be many who have small private means, and who are not in a position to command the skilled assistance they will urgently need. In many cases continuous treatment for long periods will be necessary. Though to offer assistance in such cases will be a matter of considerable delicacy, nevertheless, I feel sure that it will be generally felt that an attempt should be made to do so.

The undermentioned gentlemen have consented to act upon a General Committee, and to assist the objects of the scheme in every way within their power.

A fund has been opened to which I earnestly trust many of your readers will readily contribute. The provision of accommodation for convalescent patients is a part of our scheme, and I have already received several offers from private persons which I have no doubt that the Committee will be glad to entertain.

Subscriptions may be sent to Messrs. Coutts, Strand, London; the Duke of Abercorn, Hampden House, Greenstreet, W.; or to the Hon. Arthur Brodrick, 18, Eaton-square, S.W. (Hon. Secretary and Treasurer to the Fund, to whom enquiries may be addressed). Cheques should be crossed "Sick and Wounded Officers' Surgical and Medical Aid Fund." I am, Sirs, yours faithfully,

ABERCORN.

Hampden House, 61, Green-street, W., Jan. 11th, 1900.

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"THE CONFERENCE AT NEWCASTLE AND THE MIDWIFERY QUESTION."

To the Editors of THE LANCET.

SIRS,—I cannot hope to satisfy the craving of Mr. Haydn Brown's forensic appetite but would like to lay before him the following points arising from his letter—points which I put forward eight or nine years ago and to which I have yet seen no satisfactory solution. Provided that every confinement case is to be once visited by a medical man, would the medical man be willing to go? It would mean an enormous increase in midwifery practice, a branch of practice which, as has been often pointed out, a very large proportion of men encourage as little as possible; it would mean being disturbed three or four nights for every one on which we are at present called out to a confinement. If going was a matter of choice many, in the country at any rate, would, I am sure, refuse. And could it be made compulsory, in either event how is the medical man to be paid? Then—and this to my mind is the chief objection to the proposal as made by Mr. Haydn Brown—would any practitioner care to accept the responsibility which would attach to him after visiting a confinement just once and in any stage? The responsibility for the safe conduct of the whole

case would certainly be transferred from the nurse to the medical man as soon as he had seen the patient; it may be wrong that it should, but I have no doubt but that it would, and this loss of responsibility by the nurse would react dangerously on her. Having sent for the medical man quite early in a case and he having pronounced all well, what responsibility would she feel for any untoward accident afterwards? Again, suppose, for instance, a fragment of placenta to be retained without the nurse knowing it, and that the medical man does not see the case until labour is presumed to be complete, of what good can his visit be and who will be held responsible when the patient develops septicæmia? Why, the medical man, of course. I cannot but think that the proposal for a visit from a medical man in every case and at any time the nurse may choose would shift responsibility from the very place where we want to place it. The suggestion in the Bill of the British Medical Association that the nurse should send when she thinks it necessary and on certain specified occasions appears to me to meet the case much more effectually.

I am, Sirs, yours faithfully,

Freshford, Jan. 8th, 1900. CHAS. E. S. FLEMMING.

THE UNIVERSITY OF LONDON ELECTION: THE CANDIDATURE OF DR. W. J. COLLINS.

To the Editors of THE LANCET.

SIRS,—In the unforeseen elevation of Sir John Lubbock to the peerage and with the possibility of the election caused thereby being rushed before Parliament meets, it is well that the medical graduates should consider carefully the claims of the two candidates who have already taken the field and between whom the running may possibly alone lie. In view of the large proportion which the medical bear to the non-medical graduates of the University, it would not be at all unreasonable that they should claim to be represented by one of their own body, and if a strong medical graduate, against whom no objection might lie, were put forward, he would probably receive the unanimous support of his fellow-graduates.

Of the two candidates referred to, one, Dr. W. J. Collins, is undoubtedly a strong one. He had a distinguished collegiate career and he has since shown administrative capabilities of the highest order. But he lies under the objection of having supported the anti-vaccination movement in a way which makes it very difficult to absolve his intelligence except at the expense of more necessary attributes. If his identification with anti-vaccination had been confined to his connexion for some years with the London Anti-Vaccination Society as one of its vice-presidents, and if it had ceased with the publication of the dissentient statement of himself and Mr. Picton in the report of the Royal Commissioners, his fellow graduates might perhaps have felt disposed to condone it. But it has not done so. From that time to this he has allowed himself to be put forward by the pamphleteers and letter-writers of the Anti-Vaccination League as one of the leading champions of their cult and as lending the mantle of his authority to the most preposterous mis-statements. And although he has been formally invited to dissociate himself from such a use of his name he has not thought fit to do so. He may assert, as he did at one of the meetings of the Anti-Vaccination Conference at Leicester in October last, that "he has never accepted the appellation of anti-vaccinator." But a man is known not only by the name he accepts but by the company he keeps. And when Dr. Collins is content to stand on the same platform, as he did at Leicester, with another member of his own profession who did not scruple to say that "the medical power of the Local Government Board" had been responsible for "one of the most damnable scenes that had ever been enacted in England, where the sanctity of the English home was invaded and where the wife's honour was sought to be taken away ..... in order that the glory of vaccination might be upheld," he will have some difficulty in persuading most people that he is not very unfortunate in the company he keeps whether he be an anti-vaccinator or not.

One of Dr. Collins's nominators is the editor of the *Vaccination Inquirer*, the organ of the Anti-Vaccination League.

I am, Sirs, yours faithfully,

Jan. 8th, 1900. A LONDON GRADUATE.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Christmas Festivities.

THERE has been no lack of the usual entertainments and festivities at the various hospitals in the city during this season. The staffs of the different institutions have thrown themselves with enthusiasm into the task of making the patients happier and brighter during their stay in hospital. On all sides their efforts have met with hearty and appreciative response and the settling down to every-day routine will be associated with many pleasant memories. An attraction at the General Hospital on Jan. 7th was the visit of the Chinese Ambassador, Sir Chihchen Lofengluh, accompanied by his suite. His Excellency expressed himself in good English and stated the pleasure which it had been to him to see how the patients were cared for and his admiration of the voluntary system which did such valuable work.

Deaths under Chloroform.

Two deaths under anæsthetics have recently been the subjects of inquiry by the city coroner. The first occurred at the General Hospital in the case of a child who was operated upon for hernia. The operation was completed when it was observed that the breathing had stopped, and all attempts to restore it were futile. Chloroform had been used. The second was that of a man, aged 61 years, a patient at the Queen's Hospital, the operation being for cancer of the jaw. The necropsy showed that death was due to asphyxia caused by collapse of the left lung. At the commencement ether and chloroform mixture was used and subsequently chloroform alone, the operation being necessarily a prolonged one.

Typhoid Fever.

Typhoid fever still continues to be rife. The number of cases increases daily. Indeed, since 1890 the number has almost trebled per annum. Various causes are assigned; no doubt sanitary defects and climatic influences have something to do in the way of factors. Under the auspices of the health committee of the city council Dr. C. K. Millard lectured on Jan. 5th on the Prevention of Infectious Diseases. The spread of knowledge by this form of teaching appeals to the intelligent and better-educated class of citizens, but it is hardly among these that the practical application is required.

Jan. 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh.

FROM the annual report of the University of Edinburgh it is seen that the total number of matriculated students during the past year was 2848; of these 1399 were enrolled in the Faculty of Medicine. The number of women attending extra-academical lectures with a view to graduation in medicine in the University was 85. The General Council of the University now numbers 8667. The total annual value of the University fellowships, scholarships, bursaries, and prizes now amounts to about £17,790. Of this sum £3500 is awarded in the Faculty of Medicine. A number of bursaries are in the gift of patrons, but the great majority of the University bursaries, prizes, &c., are awarded by the Senatus after competitive examination. In addition to the above sum a sum of upwards of £600, the income of the Earl of Moray Endowment Fund, is available annually for the encouragement of original research. Two new lectureships have been inaugurated during the year, the lecturers being Dr. Andrew Davidson, lecturer on diseases of tropical climates, and Dr. Allan Jamieson, lecturer on diseases of the skin. Dr. J. W. Ballantyne has been appointed for one year University lecturer on teratology and ante-natal pathology, and is to deliver his course of lectures in February. Two vacancies in the professoriate occurred during the year by the death of Professor Rutherford and by the resignation of Professor Prothero. The chair of Physiology has been filled by the appointment of Professor Albert Edward Schafer, of University College, London, while Professor Richard Lodge of the University of

Glasgow has been appointed to the chair of History. The John Usher Institute of Public Health is now in course of erection at Warrender Park.

"Nordrach-on-Dee."

A portion of ground 25 acres in extent has been purchased by the promoters of the proposed sanatorium for consumptives on Corsee Hill, Banchory. The price paid for the ground, which is the property of Sir Thomas Burnett of Crathes, is between £5000 and £6000. Building operations are to commence almost immediately. The building is estimated to cost £12,000.

Scottish Poor-law Medical Officers' Association.

In the annual report of the Scottish Poor-law Medical Officers' Association reference is made to several questions which came before Parliament last year, regret being expressed that the Association's Bill to amend the Local Government (Scotland) Act, 1894, introduced by Mr. Alexander Cross, M.P., was unfortunate in the ballot and never got the chance of a second reading. The Bill introduced by Mr. D. N. Nicol, M.P., suffered in the same way. Mr. Cross has again agreed to introduce the Bill of the Association next session. Dealing with the case of Mr. Lamont of South Uist, which has been often mentioned in THE LANCET, the report calls attention to Mr. Balfour's acknowledgment that if Scottish Poor-law medical officers had a power of appeal to the Local Government Board such a case as that of Mr. Lamont could not possibly have occurred. Questions in regard to tenure of office have also engaged the attention of the Association and have been brought by it before the British Medical Association. Sir Charles Cameron, M.P., has consented to become Honorary President for 1900. The annual meeting and dinner of the Association will be held at 36, Buchanan-street, Glasgow, on Jan. 19th. The secretary of the Association is Mr. W. L. Muir, 1, Seton-terrace, Glasgow.

The late Dr. George Elder.

Dr. George Elder, who died at his residence in Leopold-place, Edinburgh, on Jan. 6th, had a distinguished career as a student at the University and much might have been expected of him had his life been spared. He graduated as M.B., C.M. Edin., with honours, in 1891 and also gained one of the Vans Dunlop Scholarships of £100 per annum tenable for three years. In 1896 he took his M.D. degree and was also admitted a Fellow of the Royal College of Physicians of Edinburgh. At the time of his death he held the appointments of clinical tutor in the Royal Infirmary, assistant physician to Leith Hospital, and physician to the New Town Dispensary. Dr. Elder, who was only in his thirtieth year, was a native of the parish of Carnwath in Lanarkshire. He had contributed several articles to periodical medical literature.

Jan. 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Death-rate of Dublin.

THE death-rate of Dublin for the week ending Jan. 6th was exceptionally high, reaching 51 per 1000. The usual rate of 33 is so high by comparison with that of some cities that the increase to 51·3 may be regarded perhaps as an accidental exacerbation similar to that just now being experienced by London, but whatever the reason the figures can only be regarded as appalling.

Royal College of Physicians of Ireland.

It is announced that the sixth award of the triennial Reuben Harvey Memorial Prize will be made early in July, 1900. The prize is open to all students of the various schools of medicine in Dublin, and also to graduates or licentiates of these bodies of not more than three years' standing at the time of the award. The prize, value £25, will be awarded to the writer of the best Essay on Animal Physiology and Pathology. The essays, bearing fictitious signatures, are to be lodged with the Registrar of the Royal College of Physicians of Ireland, 6, Kildare-street, Dublin, on or before June 1st, 1900.

The Belfast Workhouse.

At the usual weekly meeting of the Belfast Guardians on Dec. 19th one of the members spoke of the horrible system of blackmail practised in the wards where wardswomen were in charge. He alleged a case in point where a young lad who was suffering from rheumatic fever was visited by his mother, and when she retired the woman in charge of the ward asked him if his mother had left anything for her. On his replying in the negative she abused him with bad language and, what was worse, deprived him of half his allowance of milk. The chairman asked that the matter should be left to the infirmary committee to deal with. It appears that there are over 600 able-bodied men and women in the workhouse and, as one of the Belfast daily papers points out, information is wanted as to the age, sex, and length of residence of these people. What is the cost of their keep and what is the value of their work? The present system is a wretched one, which stereotypes these able-bodied workers as a burden on the rates and it leads to patients being placed at the mercy of harpies like the wardswoman referred to. Her only punishment, if she can be identified, is to send her to the body of the house. The Poor-law system in Ireland is in a deplorable condition.

The Influenza.

Not since the early years of the present visitation of influenza has the malady been so widespread in Belfast and in the whole of the North of Ireland as it is now. Coincidently with this extraordinary recrudescence of the disease is the prevalence of the most variable and rapidly-changing weather. It does seem strange that after so many years' visitation of influenza we know so little as to the peculiar conditions which determine its assumption of an epidemic type as at present. Whole households are ill at once, business is being very much interfered with in Belfast owing to the illness of employés, and medical men are greatly overworked.

Extraordinary December Rainfall in Ulster.

The last month of 1899 has been a record one in Ulster in the amount of rainfall, for there was rain on 24 days, there being, in other words, only seven dry days. The total amount registered was 6·05 inches, and on one day (Dec. 28th) 1·21 inches fell. 1899 has been an exceptionally wet year, for 10·29 inches more of rain have fallen than in 1898, when the total rainfall registered was 33·07 inches.

Health of Belfast.

At a meeting of the Belfast Corporation on Jan. 3rd the general health of the city was reported to be good, the last monthly statement of the Registrar-General tabulating the death-rate of Belfast as 18·3 per 1000. The annual death-rate for 1899 was also the lowest upon record—viz., 22 per 1000. The epidemic of typhoid fever is practically over, there being only 54 cases notified in December. The chairman of the Public Health Committee, in his speech at the city council on Jan. 3rd attributed this subsidence of the enteric outbreak to the increased powers obtained by the water commissioners for preventing the pollution of the Belfast water-supply, and also to the energetic action of the Public Health Committee. With the introduction of the new Mourne water-supply he was confident that typhoid fever would become one of their rarest diseases. During the past three months 10 cases of small-pox have occurred. Owing to prompt measures being adopted the disease has not spread. The great want, the chairman said, was a proper hospital where such cases of small-pox, as well as suspicious cases, could be isolated. He was of opinion that at a very early date the corporation should construct a small-pox hospital at Purdysburn, as until this was done Belfast was not in a proper condition to resist a small-pox epidemic. Stringent efforts were being made to put cowsheds into good order and to improve the milk-supply of the city and to prevent the sale of milk affected in any way with tuberculosis. He hoped the rural authorities would combine with the city sanitary officials in this most important matter. New refuse destructors would shortly be in working order, and in a few years all the houses without proper accommodation would be provided with water-closets. During the past year 2734 new water-closets had been erected in old houses by the direction and under the supervision of the public health department. It is interesting to note that while the death-rate as compiled from the Registrar-General's returns for the three weeks ended Dec. 23rd is 18·3 per 1000 for Belfast, during the same period it was 41·5 in Dublin and 27·4 in Cork. The extraordinarily high death-rate of Dublin is attributed by Mr. T. W. Russell, M.P., to the overcrowding of the tenement houses.

Case of Anthrax.

An interesting case of anthrax is at present in one of Professor T. Sinclair's wards in the Belfast Royal Hospital. The patient, who is employed in a bone manure manufactory, came to hospital with a sore on the inner side of the left thigh. This consisted of a central depressed gangrenous patch, surrounded by a series of vesicles outside of which there was a corona of œdema. From the serum of the vesicles Dr. Lorrain Smith cultivated the anthrax bacillus. Professor Sinclair removed the local sore and the glands in Scarpa's triangle, which were enlarged, and tied the saphena vein. The glands fortunately only yielded on cultivation the staphylococcus bacillus, showing mere local irritation. The man has done well.

Portadown Water-supply.

A very influential deputation appeared before the Portadown Urban Council on Jan. 1st with a memorial signed by 1100 ratepayers in opposition to the proposed plan of taking the new water-supply from the river Bann. It would appear that a supply of water is an urgent necessity for Portadown and this can be obtained either from the river Bann or from Lough Neagh, into which the Bann flows. The commissioners asked Sir Charles Cameron to examine both supplies, and he did so, and reported that the water of the lake was superior to that of the river only in colour, being not so yellow. As the river source would be cheaper he reported in favour of it. He advised ample filtration with slow passage of the water through the filter beds. He reported that the Thames was subject to much more filtration than the Bann.' In this way the commissioners were guided in adopting the river source of supply. When arrangements as to plans are complete the commissioners will apply for a loan and this will lead to a Local Government Board inquiry.

Jan. 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Medical Officers for the Mercantile Marine.

A LAW passed in 1896 completely altered the organisation of the sanitary measures as hitherto existing in France and brought it into conformity with the decisions arrived at by the international conferences which had met at Venice, Dresden, and Paris. In addition to doing away with the vexatious system of quarantine and replacing it by strict sanitary inspection and a well-organised system of disinfection a special body of medical men for the mercantile marine was ordered to be set on foot. The steamship companies were to be obliged to have on board their boats a competent medical man selected from a list drawn up after a competitive examination in the pathology of foreign diseases, in bacteriology, in legal sanitary measures, and in methods for disinfection. The companies could choose their medical men from a list of those who had passed the examination, and such lists were posted at every port. Some companies were wise enough to see that if obedience to this order threw some slight extra expense upon them at the outset, yet that the presence of a duly authorised medical man would be of the greatest assistance to them in the event of an epidemic. Other companies, however, could not rise to this view and only looked at the extra expense, for before the passing of the regulations their boats only carried a medical student, who was paid a mere nominal salary or sometimes none, or else they carried no medical adviser at all. The regulations, therefore, were bitterly opposed by such as well as by those old practitioners who had been in the employ of the companies and who were either too old or too lazy to get up the knowledge required for the passing of the examination. The various Ministers of State concerned did nothing to stay the progress of the reform; the Minister of the Interior, under whom matters of public health come, agreed with the Minister of the Marine Department that a period of two years should be allowed for the new regulation to be duly made known to the service; but the Minister for Foreign Affairs, whose duty it was to notify the change to all consuls and agents concerned, was remiss in his duties. Dr. Reynés in an interesting article in the *Presse Médicale* quotes an instance as having occurred in the case of a Marseilles company which is in the habit of running boats to Genoa to pick up Italian emigrants who sail to America under the French flag. This company takes an Italian medical man as surgeon. The French consuls at Naples and Genoa who signed the ship's papers, and in so doing committed a breach of the regulations of 1896, have this excuse to offer, that they had never been officially informed of them. Dr. Reynés in his article makes a vigorous claim for the strict enforcement of the regulations as well as strict official recognition of the rights of these medical men who have to pass a very severe examination, who thereby gain what should be a privileged position but whose rights as a fact are merely nominally guaranteed. There are in all 250 of these mercantile marine medical men, of whom 150 form a society *de médecins sanitaires maritimes*, presided over by M. Borel and having its headquarters at Marseilles. It publishes a quarterly journal which deals with technical matters and professional interests. Dr. Reynés, who is Vice-President of the society, demands that the *médecins sanitaires maritimes* should be granted autonomy and independence. He is not satisfied that the medical man should be a simple servant of the company taken on and paid at the company's pleasure. If, for instance, the medical man should have to certify the existence of some disease in opposition to the interest of the company he has no liberty to speak out. If he is conscientious and certifies the case as suspicious he receives the formal congratulations of the Government and his *congé* from the company who fill his place with someone more complacent. This is a matter of considerable importance, for at present the medical man has to be very heroic when the question is one of either losing his place or neglecting his duty. Dr. Reynés demands that the medical man should be as much an agent of the State as are the post office officials on board, and that the company should have no right to dismiss him save, of course, in the event of his committing a grave breach of discipline while on board.

The Sale of Impure Ice.

The Prefect of Police is acting on the advice of the Council of Hygiene. The attention of the Council was drawn to the sale of impure ice by the occurrence, especially in summertime, of various gastro-intestinal affections, sometimes of an epidemic nature. These affections appeared to be due to the use of either natural ice collected from impure sources or of artificial ice made from dirty water. The Prefect of Police has decided that in future ice-sellers must stock and sell ice as being of two definitely distinct kinds. These must be distinguished by being ticketed as ice for eating purposes and ice for industrial purposes, and the former must be obtained from spring or sterilised water. In no case is the latter kind, which is not intended for internal consumption, to be substituted for the former under pain of a very heavy penalty.

The Disinfection of Telephones.

The Under-Secretary of State who is responsible for the posts and telegraphs, has, with a view to avoid the transmission of infectious diseases, just made an order that the receivers and transmitters of all public telephones shall be disinfected daily by being washed with a strong solution of carbolic acid. This concession to the principles of hygiene has been received with a certain amount of scepticism by medical men. The idea, they say, is excellent, but they take exception to the choice of a disinfectant, for carbolic acid has an abominable smell and is of very feeble microbicidal power.

Jan. 9th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

A Contre-coup to the "Holy Year."

FRESH from his successful vindication of Italian to a place among the languages officially recognised at the next International Congress of Medicine and Surgery, from his bidding godspeed to Professor Terni of Messina *en route* to Portugal and Brazil to make known the results of the intravenous injection of corrosive sublimate in pestis bubonica, and from his task of filling up 11 chairs left vacant in the University of Cagliari, the versatile and indefatigable Minister of Public Instruction has recently issued a circular designed as a corrective to the pro-Papal reaction supposed, rightly or wrongly, to be promoted by the celebration of the Holy Year. Recalling

the fact that the first Holy Year was instituted by Pope Boniface VIII. in 1300; that among those who repaired to Rome for the occasion was Dante Alighieri; that it was in that year the great Tuscan poet, profoundly impressed by the degeneracy of the age, conceived the Divina Commedia in which he laid the lines of that patriotic ideal which, after six centuries of vicissitude and struggle, has culminated in Italy's unity and independence,—Dr. Baccelli, in the circular aforesaid, invites all the schools and seats of learning throughout the kingdom to commemorate the opening year of the next century by special study of Dante with a view to wider academic competition on the many themes suggested by his poem—competition in which the successful candidates will receive prizes from the State on the award of its Department of Public Instruction. By the step thus taken Dr. Baccelli institutes a new jubilee—accepted by lay and clerical journals alike as a *contre-coup* to that of the Holy Year—and appeals to Young Italy to devote itself to the study of the national poem so as thereby to make itself proof against the Ultramontane influences arrayed on the side of the Vatican in antagonism to the work of Mazzini, Cavour, and Garibaldi. Without commenting on the political inspiration of the appeal the youth to whom it is addressed may safely be congratulated on the impulse thus imparted to the study of a poem which has always possessed the most powerful attraction, even fascination, for the liberally educated of every country, which in Germany and Great Britain has numbered among its interpreters and commentators members of all professions, including the medical, and which in the latter country alone can point to Dr. Barlow and to Dr. John Aitken Carlyle as quite *hors ligne* in knowledge of its tenour and in power to throw light on its obscurer passages. Always solicitous for the honour of the profession as compatible with the highest culture outside its special subject-matter, Dr. Baccelli, while taking what he holds to be a patriotic step against supposed obscurantism and reaction in Italy, is also proving once more that the most loyal devotion to the healing art and the sciences underlying it does not exclude appreciation of the *chefs-d'œuvre* of the human mind, whether these have come down to us from ancient or from mediæval times or whether they are inspired by the vicissitudes and the events of the day now passing.

Three Medical Worthies.

At Padua on Dec. 7th, at the ripe age of 86 years, died Lodovico Brunetti, emeritus professor of pathological anatomy. His was a striking personality, combining ardent prosecution of science with a "sense of citizenship" almost aggressive in its energy. He had often to differ from his colleagues in questions of academical discipline and once in a crisis of the kind he had an altercation with Professor Tamassia so "vivacious" that by order of the Procuratore dei Rè he was put under arrest. The students, who idolised him, broke out into open rioting and for three days they maintained a "barring out," surrounded by troops and tolling the great bell (*campanone*) renowned in Venetian history. When the besiegers and besieged came to terms none of the university authorities recalled the excited youth to their studies with more effect than Brunetti, interesting them in the latest accessions to science, particularly in the recent discovery of the bacillus choleræ in which he made independent and valuable researches. Among the many distinctions he held was that of honorary professor of the Imperial University of Charkow; while the Committee of the Paris Exhibition of 1867 bestowed on him its "grand medal of scientific merit," and a few years later the Universal Exhibition of Vienna, also through its committee, honoured him with its medal awarded for contributions to biological science. One of his specialties was that of embalming the dead, a *métier* almost exclusively Italian. From among numerous competitors he was chosen to embalm the body of King Victor Emanuel and but for adverse circumstances would have performed the same service in the case of Pius IX. The Paduan University for 48 hours after his death was draped in mourning and on Dec. 9th he was followed to the grave by all the notabilities of the city and province, the *oraison funèbre* being delivered with his accustomed felicity and effect by Dr. Achille De Giovanni, the Rector Magnificus.—Another loss sustained by Italian medicine is that of Dr. Giovanni Zoia, Professor of Anatomy in the Lombard University of Pavia. A native of Mantua, he distinguished himself, side by side with the patriot and statesman Benedetto Cairoli, in his country's fight for independence. This effected he threw himself with equal ardour into biological study and rose to be one of the best anatomists and teachers of anatomy in the Italian kingdom. Three years ago he lost two sons by Alpine misadventure and the bereavement so preyed upon him that he was never the same man again. A long malady supervened to which he succumbed on Dec. 16th, regretted by all the Lombard school and, indeed, by the whole civic population in whose welfare he took a quite philanthropic interest.—The last and not the least eminent of the trio is Dr. Giuseppe Pinto, who died on Dec. 18th in the Hospital of San Giacomo, in the Corso, in his fifty-seventh year. He was a Roman of the masculine, almost severe, type, very accomplished in his profession and devoted to its history, in which he published a well-written volume by way of supplement to the master-work of Puccinotti. He held the post of *privat-docent* in that subject in the University of Bologna and afterwards he filled the chair of hygiene in the School of Agriculture in Rome. In this capacity he did excellent work towards the "bonificamento" of the Campagna, the reclamation of marsh lands, and the re-afforesting of upland tracts denuded by reckless tree-felling. Himself also a patriot who joined in the movement by which Rome became the capital of United Italy, he was an active and enlightened provincial councillor, ever foremost in mitigating the lot of the agricultural poor. His malady was, like that of Professor Zoia, a lingering one—cancer of the throat, for the treatment of which he had placed himself under the care of the clinical staff of the San Giacomo Hospital.

Jan. 6th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Military Governor of Cuba a Sanitarian.

THE appointment of General Leonard Wood as Military Governor of Cuba is an event of the greatest importance to the future health and prosperity of the people of that island. General Wood is a graduate of the Harvard Medical School, and was in the active practice of his profession at the time of the outbreak of the war with Spain. At the close of the war he was made Military Governor of the Province of Santiago, and at once organised and put in operation sanitary measures designed to exterminate the pestilential diseases which had rendered that city almost uninhabitable. Chief among the diseases which annually scourged the city of Santiago was yellow fever, and though the season was well advanced when Dr. Wood assumed control so radical were the measures of sanitary cleansing which he rigorously enforced that the appearance of the fever was much delayed and when it did appear the local authorities had it under complete control. Though General Wood now enters upon a far wider field of service the duties are practically the same as those which occupied his thought in the Province of Santiago, viz., the promotion of the public peace and the public health. It is believed that he will inaugurate in Havana and the towns throughout the islands the same rigorous measures that have proved so efficient in Santiago. The result cannot be doubtful. Yellow fever, small-pox, and other kindred diseases which annually decimated the population of Cuba and were a constant menace to the health of the seaport cities of the United States, will be exterminated in the islands.

The Army Ration.

Dr. Charles Smart, Deputy-Surgeon-General and an expert chemist, makes the following statement in regard to the army ration:—"The United States ration is the most liberal ration in the world; it is the best ration for the far north-west of this continent, whence come the sub-zero cold waves to sweep over the country from the upper strata of the atmosphere, and it is the best for the tropics when intelligently utilised. It is the product of the experience of several generations of army officers, and it is the part of wisdom to be slow in urging alterations at the suggestion of people who know that an excess of fatty food is not suitable for a dietary in the tropics and who have just discovered that there are 12 ounces of bacon in the soldier's ration. Under the present law and regulations as to the ration the soldier can have any variation of his diet,

within certain money-value limits, which his officers consider necessary for his well-being. His ration is fixed by law and it is a most liberal one, but his dietary depends upon the intelligent supervision of his company officers and the ability of his company cooks. If a change in the dietary is advisable it lies with the company commanders to carry it into effect. The elasticity of the ration is wonderful. It is so elastic that the soldier may verily eat his candles if he does not require them for any other purpose. He may leave the candles in the hands of the subsistence department and if their money value will pay for a can of peaches or a pound of rice or for so much of any other of a long list of articles kept for sale by the subsistence officers, he can eat his candles' component in the form of peaches or rice or any other of the purchasable things. So with the bacon. He is no more required to eat that because it is a part of the ration than he is asked to eat the candles, but he may transform it into some other kind of food which he likes better or which is better for him under the climatic conditions which affect him at the time."

Mortality from Diphtheria in New York before and after the Introduction of the Antitoxin Treatment.

The following statistics of the mortality from diphtheria before and after the introduction of the antitoxin method of treatment have been kindly furnished to your correspondent to Dr. John S. Billings, jun., Assistant Director of the Bacteriological Laboratory of the Department of Health. The tables show the number of cases, deaths, and mortality per cent. of diphtheria in New York City (boroughs of Manhattan and the Bronx) from 1891 to Oct. 1st, 1899.

Before the Introduction of Antitoxin.

Period.	Cases.	Deaths.	Mortality per cent.
1891	5264	1970	36·7
1892	5184	2196	40·6
1893	7021	2558	36·4
1894	9641	2870	29·7
After the Introduction of Antitoxin.			
1895	10,353	1976	19·1
1896	11,399	1763	15·4
1897	10,896	1590	14·6
1898	7593	923	12·2
Jan. 1st, 1898, to Oct. 1st, 1898	4778	695	14·5
Jan. 1st, 1899, to Oct. 1st, 1899	5100	782	15·3

The following table shows the number of cases of diphtheria in New York City (boroughs of Manhattan and the Bronx) in which antitoxin was administered free of charge by this department and others in 1898 and 1899, with the number of deaths, mortality, and also the corrected mortality after deducting the cases already moribund when antitoxin was administered.

Period.	Cases.	Deaths.	Mortality per cent.	Moribund deducted.	There remain. C.	There remain. D.	Mortality per cent.
1898.	1494	206	13·7	81	1413	125	8·8
1899 (first nine months only).	1358	170	12·5	61	1257	109	8·4

Dr. Billings adds:—"During the summer of 1899 the department has been testing the so-called globulin diphtheria antitoxin. It was found by the chemist of the department that when antitoxic serum was treated with magnesium sulphate and heated the antitoxic substances were precipitated along with the globulin. In this way 90 per cent. of the antitoxic substances may be extracted from the serum. By replacing the magnesium sulphate with sodium sulphate the globulins and antitoxins are again rendered soluble. In this way very concentrated solutions of antitoxin may be obtained, and the department is now testing this globulin in the Willard Parker Hospital for Contagious Diseases, in order to determine whether its use is followed by rashes and the other occasional sequelæ of ordinary antitoxic serum.

Dec. 18th, 1899.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Health of Sydney.

THE report of Mr. T. H. Kendall, medical adviser to the Metropolitan Water and Sewerage Board, Sydney, for the quarter ending Sept. 30th, 1899, has just been presented to the board. The population of Sydney has materially increased since the corresponding quarter of 1898, and shows a greater increase than for any similar period during the previous four years. The increase is chiefly due to a decrease in the death-rate, the total number of deaths having been 1190 as against 1875 for the corresponding period of 1898. The mortality from diarrhœal diseases shows a very marked decrease, attributed by Mr. Kendall to the extension of the sewerage system. Diphtheria and tuberculosis have also claimed fewer victims, a result which is attributed to the drying of the soil brought about by the laying down of the sewers. To keep up the improvement Mr. Kendall insists on the necessity of destroying all garbage by fire in destructors. Typhoid fever has increased in prevalence, 108 cases being reported, as against 68 for the same quarter of 1898, and 34 for that of 1897. Many cases were traced to the milk-supply, and Mr. Kendall points out that Pasteurisation of milk is useless against infection in the milkshop and during delivery. Attention is called to the dangers lurking in the concoction known as "ice-cream," in which more and worse bacterial bodies are found than in concentrated sewage. This statement was brought under the notice of the Legislature by Dr. Ross and the Health Department replied that attention had been given to the matter, that the comparison with concentrated sewage could not be rightly made, and that the execution of the Adulteration Clauses of the Health Act was rigid so far as the Board of Health took part in it, but that the local authorities rarely took proceedings.

The Standard of Milk.

Some time ago, as stated in these columns at the time,[1] the New South Wales Board of Health fixed a milk standard. Recently the inspector of nuisances for Marrickville prosecuted a dairyman for selling milk which did not contain the quantity of butter fat required by this standard. The dairyman was fined by the stipendiary magistrate, but appealed to the Full Court, who reversed the decision on the ground that the milk was received by the inspector in absolutely the same state as that in which it left the cow and was not adulterated either by addition of water or the subtraction of cream, and as the dairyman had done all that could be reasonably required of him he was not liable to a penalty. Further, the purchaser had simply asked for milk, not for milk of the standard prescribed by the Board of Health, and he received milk, and the Health Act did not make the supplying of milk not up to the standard fixed by the Board an offence. In consequence of this decision by the Full Court Dr. Ashburton Thompson, President of the Board of Health, states that if the public wish to have a standard for milk the Legislature will have to amend the Health Act. The Board when fixing the standard was in some doubt whether it would be binding in a court of law.

Small-pox on s.s. Nineveh.

When the s.s. *Nineveh*, from London *viâ* the Cape of Good Hope, arrived at Fort Phillip Heads and was boarded by the pilot he was assured that she had a "clean" bill of health. The port health officer, Dr. Howard, on investigation differed from this opinion and diagnosed a case of small-pox in a steerage passenger. The ship's surgeon—whose name by a curious coincidence is Jenner—maintained that the disease was not small-pox. Dr. McLean, the other port health officer, supported the view of his colleague, and the vessel was quarantined. The vessel was allowed to discharge her Melbourne cargo into lighters and the passengers were put into quarantine, the mails were fumigated, and the vessel proceeded to Sydney. All the passengers at the quarantine station were vaccinated and two more undoubted cases of small-pox subsequently developed.

Outbreak of Beri-beri on Board Ship.

When Dr. McLean, port health officer for Melbourne, boarded the ship *Stirling* he found the captain, steward, and two seamen suffering from beri-beri, while the second mate

[1] THE LANCET, Feb. 11th, 1899, p. 413.

had died from apparently the same disease during the voyage. The vessel had an unusually protracted voyage from Archangel and the stock of vegetables gave out. The crew were served with rice and preserved potatoes. The rice was found on examination by Dr. McLean to contain a fungoid growth.

Appointments.

Dr. George Rothwell Wilson Adam has been appointed lecturer on obstetrics and diseases of women at the University of Melbourne in place of Dr. Balls-Headley, who has resigned. The university lecturer is *ex officio* a member of the honorary staff of the Women's Hospital, Melbourne. Dr. Adam is already on the staff of this institution by election, and it is doubtful whether a vacancy will now occur for the elective post.—Several changes have been made in the staff of St. Vincent's Hospital, Melbourne. Mr. F. W. W. Morton and Dr. R. A. Stirling have retired from the position of physician and surgeon respectively, and have been appointed to the consulting staff. Mr. W. F. Moore has been appointed surgeon in place of Dr. Stirling. Dr. Murray Morton and Mr. F. A. Newman have been appointed surgeons to out-patients, and Dr. J. F. Wilkinson and Dr. F. O'Sullivan, physicians to out-patients. The rest of the staff were re-appointed to their respective positions.

Dec. 1st, 1899.

Obituary.

ALEXANDER GRANT, F.R.C.S. EDIN.,

SURGEON-MAJOR, BENGAL ARMY (RETIRED); HONORARY SURGEON TO THE QUEEN.

MR. ALEXANDER GRANT, who has recently died in London at an advanced age, entered the Bengal Medical Service in 1840 and retired as surgeon-major soon after returning to England in 1861. His career was a distinguished one. He served with the 55th Foot during the Chinese war of 1841-42, and was officially thanked by his superior officer when the regiment returned to England. Having been appointed civil surgeon of Bhagulpore, he was ordered to join the army of the Sutlej in the first Sikh war. He subsequently became civil surgeon of Chapprah, and in 1849 was appointed surgeon to the Governor-General, which office he held till Lord Dalhousie's return to England in 1856. He had been appointed Presidency surgeon and surgeon to the Presidency General Hospital, Calcutta, a much-coveted appointment, and on his return from England, whither he had accompanied Lord Dalhousie, he held the important office of apothecary-general, and as such rendered valuable services in providing medical stores for the army in the field during the period of the Mutiny, for which he received the thanks of the Government of India and the Secretary of State. He had held the important office of President of the Medical Faculty in the University of Calcutta. Failing health compelled Mr. Grant to return to England in 1861, but he continued to do useful work and to take great interest in the service of which he had been so brilliant an ornament and to which he rendered such valuable aid by his influence with the great Governor-General, whose memorable despatch respecting the Indian Medical Service was based on the information furnished by Mr. Grant. Mr. Grant was much respected, trusted, and beloved by all who knew his sterling uprightness, unselfishness, and modesty, which were not less appreciated than his great abilities and unswerving devotion to duty. His memory will be cherished not only by the Indian Medical Service but by all who knew him in India, England, and elsewhere.

WILLIAM NEALOR THURSFIELD, M.D. EDIN., M.R.C.S. ENG., D.P.H. CAMB.

BY the death of Dr. Thursfield the department of public health has sustained a loss which will be deplored not less by his colleagues than by the members of the numerous sanitary authorities to whom he has rendered most faithful and ungrudging service during the past quarter of a century. William Nealor Thursfield was born in the year 1840 in Shropshire, the county with which his name and work will always be most closely associated. After leaving Marlborough College he entered at King's College where he came under the influence of Sir William Fergusson, and subsequently he joined the University of Edinburgh where he graduated M.D. in 1862, after having obtained his M.R.C.S. Eng. in the previous year. In 1877 he received the recently created D.P.H. Camb. During the first year after his graduation he held a commission at Netley which he resigned owing to the serious illness of his father, upon whose death he took medical charge of an emigrant ship to New Zealand. While in this colony he gathered together a most valuable collection of arms and implements.

Dr. Thursfield's first public health appointment was in 1870 when he was elected medical officer of health for the town of Wellington, in Shropshire, where he also engaged in general practice. In 1873 he was appointed medical officer of health to a large combination of urban and rural districts which were subsequently added to in number until he became responsible for the public health administration in some part or other of no fewer than seven contiguous counties. In 1897 he gave up these district appointments and was elected medical officer of health to the county of Salop. After the arduous labour entailed by his large combination of districts he looked forward to many years of good work, but anticipated in connexion with it less stress and anxiety. It is pathetic, therefore, to record that within a few months of his election to the county appointment he developed ataxic symptoms, so that until the time of his death on Dec. 19th last he could attend to his duties with increasing intermittence. The influence of every medical officer of health to a large district must of necessity extend far beyond his own immediate area of administration, but in the case of Dr. Thursfield that influence was extended in a manner that was unique, for the mere physical conformation of his district necessitated the constant employment of a qualified assistant. The experience gained by those gentlemen who were fortunate enough to be associated with him has always stood them in good stead, and they are now to be found carrying on public health work in various parts of Great Britain, as far north as the county of Lanark and down in the south in the county of Glamorgan. Dr Thursfield was at one time a president of the Incorporated Society of Medical Officers of Health and of the Birmingham and Midland Branch of the society. In addition to his most valuable series of reports he contributed many papers upon subjects relating to his own special branch of practice.

JAMES HOWISON, L.R.C.P., L.R.C.S., L.M. EDIN.

A LARGE circle of medical friends and patients in the north will regret to hear of the death, in his seventy-seventh year, of Mr. James Howison of 33, Abbey-road, London, N.W. Mr. Howison was descended from a long line of medical men on the maternal side, representatives of three generations having practised in the city of Durham at the same time. He had also three uncles in the profession. He was for many years connected with the old Edinburgh Infirmary, where he held the positions of house physician, house surgeon, prosector of anatomy, instructor in the treatment of fractures and of bandaging, apothecary, and cupper. While at the infirmary he designed an inhaler which is known by his name and also a form of splint for club-foot. On leaving Edinburgh he held two appointments as physician in private families, and then he went to Darlington, where he was soon appointed honorary surgeon to the hospital—a position which he held for nearly 20 years. During the time when Darlington was the centre of the iron industry he was appointed surgeon to all the works there.

The following is a quotation from an illuminated address which was presented to him (with a purse of gold) on his leaving Darlington: "We beg to assure you, Sir, that we part from you with the utmost regret. You have endeared yourself to numbers of us and our families by your kindness of heart, courteous, and gentlemanly bearing, your remarkable frankness and candour as a medical man, and, moreover, the solicitude you have ever evinced for the recovery and welfare of your patients. We have the highest appreciation of your skill, not only as a surgeon, but in the wider field open to the physician in the region of medical science. With a naturally acute and appreciative mind you have ever been ready to seek for and adopt the most advanced knowledge in connexion with the profession of which you are so conspicuous an ornament." Mr. Howison towards the close of his life had lost his sight, being quite blind in one eye and

partially blind in the other. Blindness was the cause of his death by a sad accident. On Saturday afternoon, Dec. 23rd, as a train going to Baker-street was entering West Hampstead Station during a dense fog the engine-driver felt the engine going over something. Mr. Howison was then found lying flat on his back between the rails and the side of the platform, having evidently stepped over the side in the dark. He was much injured and was conveyed to University College Hospital, Gower-street, but he died on the way thither.

DAVID CULLEN, M.D., L.R.C.S. EDIN.,
DEPUTY SURGEON-GENERAL, A.M.D.

ON Jan. 4th Deputy Surgeon-General David Cullen, A.M.D., passed away peacefully at his residence, Halsey House, Cheltenham, in the sixth-seventh year of his age, after seven weeks' illness. Deceased some five years ago was the subject of prostatic disease, but later he developed symptoms of abdominal malignant disease, which a few months ago became complicated by ascites. No doubt through a desire to avoid giving anxiety to his family and relatives he maintained a marked reticence respecting his condition and avoided all reference to his malady. Till seven weeks ago Dr. Cullen maintained his general habits of life, enjoying the society of his family and friends, walking out daily, always cheerful and uncomplaining; but then, finding that he needed help, he sent for his friends Dr. John Bramwell and Mr. Cripps Lawrence, who attended him till he was released. The day before his death, the ascites having increased, threatened to add to his suffering, and relief was obtained by paracentesis. Dr. David Cullen graduated M.D. Edin. and L.R.C.S. Edin. in 1854 and served in the Army Medical Department from 1854 to 1869; during that period he was an assistant surgeon on the staff of the 6th Light Dragoons, the 3rd Battalion Rifle Brigade, and the 17th Lancers. He served in the Crimea from 1854 to 1856 and in the Indian Mutiny from 1857 to 1859. Later he was surgeon-major in the 71st Highland Light Infantry and was registrar to the Royal Victoria Hospital, Netley, from 1875 to 1880, after which he retired on a pension. Dr. Cullen was awarded medals for his services in the Crimea, in Turkey, and in the Indian Mutiny, and clasps for Sebastopol and Lucknow. For the last 18 years Dr. Cullen has resided in Cheltenham.

JOHN GORHAM, M.R.C.S. ENG., L.S.A.

ON Dec. 13th, 1899, there passed away John Gorham, one of the oldest and best known practitioners of Tonbridge. He was educated at Tonbridge School and studied medicine at Guy's Hospital, becoming L.S.A. in 1835 and M.R.C.S. Eng. in 1839. Returning to Tonbridge he entered into partnership with Dr. West, who was a well-known surgeon of the day. Mr. Gorham paid special attention to the physical side of science and wrote much and brilliantly upon light and crystallography. Among his works were "Unfrequented Paths in Optics: Part 1, Light from a Pinhole; Part 2, Light from a Fissure"; "A System for the Construction of Crystal Models on the Type of an Ordinary Plait"; "The Rotation of Coloured Discs," *Quarterly Journal of the Microscopical Society*, 1859; "Mode of Calculating Hexagonal Facets in Cornea of the Eye in Insects"; "The Diascope, a New Optical Instrument"; "Rudiments of Colour by Rotation," *Transactions of the Royal Microscopical Society;* "The Stereograph, for Delineating Solids in Space"; "Venation in Leaves of Umbelliferæ"; "On the Composite Structure of Simple Leaves"; "Tooth Extraction, a Manual on the Proper Mode of Extracting Teeth"; "The Tubular Balance"; "Intussusception in Infants"; "On the Blending of Colours by the Sole Agency of the Sensorium," *Brain*, 1882; "The Pupil Photometer"; and papers upon "Ovarian Dropsy" and "Respiration and Pulse in the Infant" which appeared in our columns. He was in his eighty-fifth year.

FREDERICK WILLIAMS LEWIS, M.R.C.S. ENG.

MR. FREDERICK WILLIAMS LEWIS died, after a few hours' illness, at his residence, Violet Cottage, Llandovery, towards the end of last year. He received his medical education at the Middlesex Hospital. After qualifying M.R.C.S. Eng. in 1873, he became house surgeon to that institution. He afterwards came to Llandovery, where he became partner to Dr. Thomas, to whose practice he succeeded. He was at once in the full swing of practice. He became medical officer for the No. 1 district of Llandovery Union, medical officer of health for the Llandovery Urban and Rural District, and surgeon to the Great Western, Vale of Towy, and London and North-Western railway companies. He was a conspicuously able accoucheur and a courageous and dexterous surgeon, and results of operations performed by Mr. Lewis remain as striking examples of neat and successful surgery. By his unceasing kindness, sympathy, and liberality, Mr. Lewis had endeared himself to rich and poor alike. The poor especially have lost in him a warm-hearted and most generous helper and friend. The funeral procession was one of the largest ever witnessed in Wales.

GEORGE CHEESMAN, L.R.C.P. EDIN., M.R.C.S. ENG.

WE regret to announce that Mr. G. Cheesman, who had been the medical officer for the Southampton Incorporation for many years, and who was formerly a very well-known practitioner in the town, died at his residence, Grendahr, Hillside-avenue, Bitterne-park, on Jan. 2nd, at an advanced age. He represented the old All Saints Ward in the council for a number of years prior to the redistribution of seats.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. J. Paetsch, professor in the Berlin Dental Institute.—Dr. Tirant, who formerly held an important official post in French Cochin China, where he made important zoological observations.—Dr. Johann Mitvalsky, an ophthalmologist of considerable reputation on the teaching staff of the Bohemian University of Prague. He was 38 years of age.

Medical News.

UNIVERSITY OF LONDON.—At the B.S. examination for honours the following candidates were successful:—

Surgery.—First Class: Thomas Rupert H. Bucknall, M.D., London Hospital; Mabel G. Stevenson (gold medal), Royal Free Hospital; Wilfred B. L. Trotter, M.D. (scholarship and gold medal), University College; and Jane Holland Turnbull, Royal Free Hospital. Second Class: Philip Turner, B.Sc., Guy's Hospital.

N.B.—The foregoing list, published for the convenience of candidates, is provisional only, and is not final until the reports of the examiners shall have been confirmed by the Senate.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held in January the following candidates passed in the subjects indicated:—

PART I.

Biology.—B. F. Board and C. Kellgren, Royal Free Hospital; R. V. Khedkar, Bombay; D. Mann, Royal Free Hospital; A. Rogers, Cardiff; and J. S. Wilkes, Birmingham.
Chemistry.—C. T. Price, St. Bartholomew's Hospital, and G. W. N. Stevens, Charing-cross Hospital.
Materia Medica and Pharmacy.—K. C. Edwards, Cambridge and Glasgow; A. W. Ellis, Edinburgh; F. A. Segreda, Guy's Hospital; P. G. Sheppard, Cambridge and Liverpool; A. D. Sibree and D. A. Stepney, Royal Free Hospital; and J. H. Williams, London Hospital.

PART II.

Anatomy.—A. T. Barnard, Royal Free Hospital; T. J. M. Clapperton, King's College Hospital; P. S. Cooke, Charing-cross Hospital; A. W. Ellis, Edinburgh; H. R. Grellet, Guy's Hospital; F. H. Hand, St. Mary's Hospital; E. M. Handley, Royal Free Hospital; J. A. Kilpatrick, King's College Hospital; A. R. McEnnery, Bristol; O. Millauro, Charing-cross Hospital; T. Scatchard, Leeds; R. H. Terry, Guy's Hospital; A. Turner, Charing-cross Hospital; F. J. Turner, Guy's Hospital; and J. A. W. Webster, St. Mary's Hospital.
Physiology.—A. T. Barnard, Royal Free Hospital; F. C. Bourns, Westminster Hospital; E. M. de Wilton, St. Mary's Hospital; C. D. E. Forbes, St. George's Hospital; E. M. Handley, Royal Free Hospital; F. H. Maberly, Birmingham; O. Millauro, Charing-cross Hospital; H. Morrison and T. Scatchard, Leeds; R. H. Terry, Guy's Hospital; A. Turner, Charing-cross Hospital; J. A. W. Webster, St. Mary's Hospital; and C. M. Woods, Charing-cross Hospital.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Karl Schweigger has decided to resign the chair of Ophthalmology at the end of the winter session. Dr. Uhthoff of Breslau has been nominated as his successor.—

Dr. Wilhelm Kolle, who has been working in Kimberley in connexion with Koch's investigations on South African cattle plague and has recently resumed his old post as assistant medical officer of the Berlin Institute for Infectious Diseases, has been appointed Professor.—*Budapest:* Dr. A. Szekely has been recognised as *privat-docent* of Infectious Diseases.—*Gratz:* The chair of Ophthalmology, vacant by the death of Dr. Borysiekiewicz, has been offered to, and declined by, Dr. W. Czermak of Prague.—*Halle:* Dr. Kast of Breslau is expected to follow Dr. T. Weber, who is retiring from the chair of Special Pathology and Therapeutics.—*Heidelberg:* Dr. Hofmokl, Extraordinary Professor of Surgery, is retiring on account of his health.—*Leipsic:* Dr. Felix Marchand of Marburg has been offered the chair of Pathological Anatomy, vacant by the death of Dr. Birch-Hirschfeld.—*Prague (Bohemian University):* Dr. Rudolf Kimla, *privat-docent*, has been granted an Extraordinary Professorship.—*Leyden:* Dr. P. Kan has been recognised as *privat-docent* of Otology and Rhinology.—*New York (Polyclinic and Hospital):* Dr. M. Manges has been appointed Professor of Medicine.

FEMALE STUDENTS ADMITTED AT HEIDELBERG.—The medical faculty of the University of Heidelberg has decided to admit female students on the same terms as "regular" male students—that is to say, they must produce a "maturity" certificate from a German gymnasium. "Occasional" female students will not be admitted.

CONVALESCENT HOME FOR WOUNDED SOLDIERS AT TORQUAY.—An influential committee has been appointed to promote a fund for opening a convalescent home at Torquay for wounded soldiers from South Africa. A large villa, which commands some of the finest coast scenery on the shores of Devon, has been placed at the disposal of the committee.

LUNACY IN SOMERSET.—At the meeting of the Somerset County Council held on Jan. 2nd it was reported that there were 847 patients in the Wells Asylum and 462 at Cotford, making a total of 1309 (782 females and 527 males). It was stated that the expenditure at the latter asylum now amounted to £172,170, although originally it was estimated that the cost would be £100,000.

PRESENTATION TO A MEDICAL MAN.—At Newick, Lewes, on Dec. 30th, a small party of friends met at the rectory to present Mr. Richard Gravely, M.R.C.S., with a jubilee testimonial to mark the completion of his 50 years' residence in the village. The rector, on behalf of the subscribers, made the presentation. The testimonial consisted of a solid silver antique inkstand, a pair of silver candlesticks, a case containing a silver pen, pencil, and paper-knife, a cheque, and an illuminated address which contained the names of more than 90 subscribers. On the inkstand is engraved: "Presented to Richard Gravely, Esq., resident in Newick 50 years—1849–1899—by his many friends," and the address itself states: "This testimonial is presented to Richard Gravely, Esq., together with a gift of silver, subscribed for by those whose names appear below, in token of their appreciation of the constant interest shown by him in the welfare of the inhabitants of Newick and the neighbourhood during his 50 years' residence among them."

MEDICAL SLANDER CASE.—At Cardiff on Jan. 5th the under sheriff (Mr. Lawrence Williams) awarded Dr. T. H. Morris £35 damages against Mr. R. W. Willis, an itinerant patent medicine vendor. Evidence showed that on Sept. 20th a young man fractured both his legs in falling from a railway-carriage. Dr. Morris was sent for and, finding amputation was required, after having rendered assistance, took the patient to the Cardiff Infirmary, where he died within two hours. The jury at the inquest found that no fault was attributable to anyone. The defendant wished to accompany Dr. Morris to the infirmary with the patient, but as there was plenty of assistance this was refused. Willis then went to an hotel at Tylorstown and there said, in the presence of Mr. T. Parry and several others, that "Dr. Morris did not know his work and made no attempt to save the young man and if he were the young man's father he would have taken him by the neck and pitched him under the train." Speaking from a van later to about 200 people he made a similar statement, adding that "if Dr. Morris had done what he ought the young man's life would have been saved."

BRIXHAM (DEVON) HOSPITAL.—At the eighth annual meeting of this institution held recently it was stated that for the first time in its history there was a favourable balance. 83 in-patients and 992 out-patients had been treated. The receipts amounted to £535 and the expenditure to £516.

SUPERANNUATION ALLOWANCES.—Dr. John Shoolbraid has been awarded a pension of £50 per annum by the Aldershot District Council on his retirement as medical officer of health of Aldershot.—Mr. Daniel B. Balding, F.R.C.S. Eng., has been granted a superannuation allowance of £34 per annum by the Royston (Herts) Board of Guardians on his retiring from the post of medical officer to the workhouse.

MEDICAL MAGISTRATES.—The following gentlemen have been appointed justices of the peace for New South Wales—namely: Francis Alexander Bennet, M.D. Aberd., of Sydney; Thomas Benedict Clune, L.R.C.S. Irel., of Petersham; Cambridge Cary Cocks, M.D., of Wentworth; James Graham, M.D. Edin., of Sydney; Henry Louis Harris, M.B., of Tamworth; Alfred Wynter Hawthorne, M.D. R.U.I., of Carcoar; Evan Lewis Hickey, M.D. Durh., of Nyngau; John William Kennedy, F.R.C.S. Irel. of Hay; Michael John Lyden, M.D., of Sydney; George Archibald Innes Mackay, L.R.C.P. Edin., of Maclean; John Michael M'Donagh, M.D. Brux., of Sydney; Sydney Sargent Merrifield, M.R.C.S. Eng., of Bombala; George Edward Miles, L.R.C.P. Lond., M.R.C.S. Eng., of Rydalmere; Alfred Edward Perkins, M.B. Syd., of Marrickville; and Charles Daniel Hartley Rygate, M.R.C.S. Eng., of Wellington.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ANDREWS, C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer for the Sixth Sanitary District of the Norwich Union.

BAILES, NORMAN CHRISTIAN, M.B., B.S. Durh., has been appointed Resident Surgeon to the General Dispensary, Birmingham.

BLACK, JOHN, L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

BLANDFORD, L. J., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

CAMPKIN, HUGH T., L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

CORRIE, A. T., L.R.C.P. Edin., M.R.C.S., Fleet Surgeon, has been appointed in medical charge of the Dockyard and Royal Naval Barracks at Sheerness.

CROOK, A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Fourth Sanitary District of the Norwich Union and the Boys' Home.

DARRELL, H. W., M.D. Toronto, L.R.C.P. Lond., has been re-appointed Medical Officer for the Third Sanitary District of the Norwich Union.

DOWLING, A., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Union Medical Officer for Haydock.

DYER, S. REGINALD, M.D. Brux., M.R.C.S., L.R.C.P. Lond., D.P.H. Eng., Conjoint Board, Barrister-at-Law, has been appointed Medical Officer H.M. Prison, Stafford.

FIELD, A. T., M.R.C.S., has been appointed Medical Officer for the Wymondham Sanitary District of the Melton Mowbray Union, vice R. Moreton, resigned.

GOFFE, E. G. L., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Assistant Medical Officer at the Lewisham Union Infirmary, vice E. R. Badcock.

GOFTON, EDWARD, M.B., B.S. Durh., has been appointed Assistant House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

HARDWICKE, G., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Resident Medical Officer by the Leeds City Council.

JAMES, M. B., M.B., Ch.B. Vict., has been appointed Assistant Medical Officer for the Workhouse and Infirmary of the Parish of St. Mary, Islington, vice M. G. Dyson, resigned.

MCCONNELL, JAS., M.B., B.S. Durh., has been appointed House Surgeon to the Royal Infirmary, Newcastle-on-Tyne.

MACGOWAN, J. S., M.D. Lond., M.R.C.S., has been appointed Medical Officer for the Fifth Sanitary District of the Township of Oldham, Oldham Union, vice J. H. Fletcher, resigned.

MCMURRY, J., M.D., R.U.I. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

MAURICE, ALBERT, L.D.S. Edin., has been appointed Dental Surgeon to the Belgrave Hospital for Children, Gloucester-street, London.

MEARNS, JAMES, A., M.B., C.M. Aberd. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

MORRISON, R., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Duffield Sanitary District of the Belper Union, vice F. D. Holmes, deceased.

MUIRHEAD, JAS., M.B., B.S. Durh., has been appointed Junior House Physician to the Royal Infirmary, Newcastle-on-Tyne.

NORTON, J. J., L.R.C.S., L.K.Q.C.P. Irel., has been appointed Medical Officer for the Alrewas Sanitary District of the Lichfield Union, vice J. J. Spears.

PARRY, T. L. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

PEARCE, FRANK J., L.D.S. Eng., has been appointed Dental House Surgeon to Guy's Hospital.

ROSSITER, C. B., F.R.C.S. Edin., has been appointed Clinical Assistant to the St. John's Hospital for Diseases of the Skin, Leicester-square, London.

ROWLAND, FRANK, L.R.C.P., L.R.C.S. Edin., has been appointed Resident Surgeon to the Birmingham General Dispensary.

SCOTT, NORMAN E. H., M.B., Ch.B. Glasg., has been appointed House Physician to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, N.E.

SIEGER, A. A. (civil surgeon), has been appointed to a vacancy on the medical staff of the Western District.

SIMPSON, WM., M.B., B.S. Dnrh., has been appointed Senior House Physician to the Royal Infirmary, Newcastle-on-Tyne.

SPOWART, W. R., M.D. Dub., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer for the Eighth Sanitary District of the Norwich Union.

STACY, J. H., L.R.C.P., L.R.C.S. Edin., has been re-appointed a District Medical Officer for the Norwich Union.

YOUNG, A. G., M.B., C.M. Glasg., has been appointed Medical Officer for the Castle Bytham Sanitary District of the Bourne Union, vice J. B. Richardson, resigned.

VALENTINE, WM., L.R.C.P., L.R.C.S. Edin., has been appointed Union Medical Officer for Newton.

WATSON, H., M.D. Aberd., C.M., has been re-appointed Medical Officer for the Fifth Sanitary District of the Norwich Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

ABERYSTWITH INFIRMARY.—House Surgeon. Must also act as Secretary. Knowledge of Welsh essential. Salary £150, with the usual residential allowances (stimulants excepted).

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £50 per annum, with apartments and board.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for twelve months. Salary £80 per annum, with apartments, board, and attendance.

BRECON INFIRMARY, South Wales.—Resident House Surgeon, unmarried. Salary £90 per annum, with furnished apartments, board (all found except beer), attendance, fire, and gas.

CARDIFF INFIRMARY.—Assistant House Surgeon and Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CHESTER GENERAL INFIRMARY.—Visiting Surgeon for two years. Salary £80 per annum, with residence and maintenance in the house.

CITY OF LIVERPOOL.—Visiting Physician to the City Hospital North, Netherfield-road. Salary £130 per annum. Applications to the Town Clerk, Liverpool.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Resident House Physician for 12 months. Salary £100 per annum, with apartments and board.—Also Resident Assistant House Surgeon for six months. Salary £50 for that period, with apartments, board, &c.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—Indoor Dispenser and Assistant to the House Surgeon. Honorarium £20 guineas per annum, with board, lodging, and washing.

DUNDEE COMBINATION POORHOUSES AND HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board and furnished apartments. Apply to the Clerk of Council, Council-chambers, Dundee.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Junior Assistant Medical Officer, unmarried. Salary £150, with board, apartments, washing, and attendance.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

GROVE HALL ASYLUM, Bow, London.—Junior Assistant Medical Officer. Salary £120 a year, with board, apartments, washing, and attendance. Personal application to Medical Superintendent desirable.

HOSPITAL AND DISPENSARY, Newark-upon-Trent.—House Surgeon, unmarried. Salary £80 per annum, with board and lodging in the hospital.

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, London.—Registrar and Pathologist. Honorarium 25 guineas per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London.—Assistant Surgeon. Also two Assistant Physicians.

HOSPITAL FOR WOMEN, Soho-square (the London School of Gynæcology).—Clinical Assistantships.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £100 a year, with board, lodging, and washing. Also House Physician for six months. Board, lodging, and washing provided.

LEICESTER INFIRMARY.—House Physician for twelve months. Salary £100 per annum, with board apartments, and washing.

LONDON LOCK HOSPITAL, Harrow-road, W.—House Surgeon to the Female Hospital. Salary £80 per annum, with board, lodging, and washing.

METROPOLITAN DISPENSARY, Cripplegate, E.C.—Resident Medical Officer. Salary £c00 per annum, furnished residence, and an allowance for coal and gas. Apply to the Secretary, Cripplegate Institute, Golden-lane, London, E.C.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Senior Assistants in the Out-patient Department, fully qualified (females), for two years.

NOTTINGHAM GENERAL HOSPITAL.—House Surgeon for two years. Salary £100, rising £10 a year to £120, with board, lodging, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, and washing.

NORTH LONDON HOSPITAL FOR CONSUMPTION, Hampstead.—Assistant Resident Medical Officer for six months. Honorarium at the rate of £60 per annum. Apply to the Secretary, 41, Fitzroy-square, W.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £140 per annum. Special arrangement as to board, &c.

PARISH OF ROUSAY AND EDILSHAY, Orkney.—Resident Medical Officer. Salary £51 per annum. Apply to the Inspector of Poor, Rousay, Orkney.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, with furnished apartments in the Asylum, board, and washing free.

ROYAL PORTSMOUTH, PORTSEA, AND GOSPORT HOSPITAL.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

ROYAL SEA-BATHING HOSPITAL, Margate.—Assistant Resident Surgeon. Salary £52 per annum, with board and residence. Applications to the Secretary, Royal Sea-Bathing Hospital Offices, 30, Charing-cross, London, S.W.

ST. GEORGE'S HOSPITAL, London.—Curator of the Museum, and an Assistant Curator. Salary £100 a year for the Curator and £50 a year for the Assistant Curator.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London.—Honorary Physician. Also House Surgeon for not less than six months. Salary £50 per annum, with board, lodging, and washing.

TORBAY HOSPITAL, Torquay.—House Surgeon. Salary £100 per annum and £5 for nurses' lectures. Board, lodging, washing, and attendance provided (wine, spirits, and beer excepted).

WALSALL AND DISTRICT HOSPITAL.—Resident House Surgeon. Salary £100 per annum, board, lodging, and washing.

WEST KENT GENERAL HOSPITAL, Maidstone.—House Surgeon, unmarried. Salary 100 guineas per annum, with board and residence, &c., rising 10 guineas a year to 120 guineas.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Acting Assistant Surgeon.

WEST RIDING ASYLUM, Wakefield.—Assistant Medical Officer to act as Locum Tenens for one month. Salary £3 3s. per week, with apartments and board.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY, Whitehaven.—House Surgeon. Salary £120 per year and £30 a year for dispensing, with furnished apartments and attendance.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, and board, lodging, and washing.

Births, Marriages, and Deaths.

BIRTHS.

ALDRIDGE.—On Jan. 2nd, at Rockstone House, Southampton, the wife of Norman E. Aldridge, M.B., of a daughter.

COSENS.—On Jan. 3rd, at Oxford-terrace, the wife of C. H. Cosens, M.R.C.S., L.R.C.P., of a daughter.

DOW.—On Jan. 4th, at High-street, Lewes, Sussex, the wife of William A. Dow, M.D., of a daughter.

WREFORD.—On Jan. 3rd, at Mount Edgcombe-gardens, Clapham-road, S.W., the wife of S. Wreford, M.R.C.S., of a daughter.

MARRIAGES.

HART—HAWKES.—On Jan. 8th, at the Congress Hall, Clapton, by Commissioner Pollard, Chancellor of the Salvation Army Exchequer, Arthur Herbert Hart, M.S., M.D., M.R.C.S., L.R.C.P., Medical Superintendent to the International Headquarters and of Bannockburn, Lordship-lane, Bruce-grove, to Kate, eldest daughter of Thomas Hawkes of Boscombe, Bournemouth.

PRALL—PINSENT.—On Nov. 1st, 1899, at St. Thomas's Church, Calcutta, by the Rev. C. Anstey, Cedric Barkley Prall, Captain, Indian Medical Service, youngest son of the late Richard Prall of Frindsbury, Kent, to Kathleen Blanche, younger daughter of William Swain Pinsent of Rose-hill, Newton Abbot, South Devon.

SEALY—POWELL.—On Jan. 4th, at St. Barnabas's, South Kennington, Francis Marmaduke Sealy, M.R.C.S., L.S.A., of Sutterton, Boston, to Harriett Catherine, daughter of the late James Turner Powell of Guildford-road, S.W.

WATSON—BARRETT.—On Jan. 3rd, at St. Luke's Chapel in Norwich Cathedral, Charles R. Watson, M.D. Brux., of Tunbridge Wells, to Grace Elspeth, daughter of Rev. Canon Barrett of Lincoln.

DEATHS.

CULLEN.—On Jan. 4th, at his residence, Halsey House, Cheltenham Deputy-Surgeon-General David Cullen, Army Medical Department, retired.

DUDLEY.—On Jan. 2nd, at Hova-villas, Hove, Sussex, John Gardner Dudley, M.A., M.D. Cantab., in his 72nd year.

ELDER.—On Jan. 6th, at 7, Leopold-place, Edinburgh, George Elder, M.D., F.R.C.P. Edin.

GRANT.—On Jan. 3rd, at 3, Connaught-square, Hyde Park, London, Alexander Grant, F.R.C.S., Surgeon-Major, late of the Bengal Service, and Honorary Surgeon to the Queen, aged 82.

LONG.—On Jan. 2nd, at Crowborough, Sussex, Henry Plater Long, M.R.C.S., aged 60.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE CLERGYMAN AND THE MEDICAL MAN.

WE have frequently pointed out that it is the duty and privilege of the Church to look after people's bodies as well as after their souls. When, however, the clergyman steps out of his proper sphere and usurps the place which properly belongs to a medical man it is time to point out that he is exceeding his duties. We are led to these remarks by a paragraph which appears in the *Eastern Morning News* of Jan. 3rd, 1900, concerning certain villages in the Wolds of Yorkshire, which are some 10 miles from a medical man. As under these circumstances the visit involves a journey of some 20 miles, it is not surprising to find that one practitioner makes a uniform charge of one guinea for a visit. This we are glad to see the *Eastern Morning News* considers by no means excessive. However, our contemporary goes on, "In some villages the difficulty is surmounted by private persons having a knowledge of physic and surgery. At Octon a large farmer is a qualified M.D., and at Langtoft the vicar can attend all ordinary cases, and make a poultice, and lance an abscess, &c." We have nothing to say as to the qualified M.D. except that as his name does not appear in the Medical Directory for 1899 under "Octon" we are unable to ascertain from what university he obtained his degree; but we feel compelled to say that the Vicar of Langtoft is treading upon dangerous ground. He can do good work if he impresses upon his sick parishioners the advisability of seeking trained medical aid or of the necessity for fresh air in the sick room. He may not do much harm with a poultice if its application is not the signal for deferring the seeking of the services of a medical man, but if he is in the habit of opening abscesses he will one day come to grief. The incision of an abscess is a thing in no way to be undertaken by unskilled hands, for it is an operation which for its safe performance demands a considerable amount of anatomical knowledge and we should counsel the reverend gentleman to refrain in future. But the kind of clergyman who does real mischief is one such as the writer of the following letter, addressed to the editor of the *Record* and published in the issue of that paper for Jan. 5th under the heading "Influenza: a Remedy":—

> SIR,—Now that the epidemic of influenza is gaining ground I strongly recommend an invaluable remedy I saw in your columns about three or four years ago, which a clergyman advised. It is to be had from Messrs. F. C. Calvert and Co., Manchester, and is called "No. 1 Medical Phenol," price 1s. 6d., or with postage 1s. 9d. Take three drops with two tablespoonsful of water for a dose—only take three doses in all—with four hours between. Half the quantity for a child. In most cases it makes a perfect cure in a day. Shake the medicine well. I have known 50 cases cured in my parish with it. SPENCER J. COMPTON.
>
> South Creake Vicarage, Fakenham, Jan. 2nd.

This kind of letter does infinite harm. It is not true to say that nine minims of carbolic acid taken in three doses will cure influenza or any other infectious fever in a day. The advice is dangerous not only to the patient himself by leading him to think that he has done everything necessary for his own welfare, but it also leads to his not improbably infecting others. Unfortunately in this land of freedom any person, however ignorant, may prescribe and any other person, however foolish, is quite at liberty to take such prescriptions; and the spread of education seems as yet to have done little in making the masses wiser. The Dowager Countess of Southdown who drugged her tenants with Podger's pills lived in an unenlightened age. The vicar of South Creake would be well advised if he attended to his own business. As a rule in a village, as we have said upon a former occasion, the vicar and the medical man may work well in coöperation, and as long as this sort of coöperation has careful regard for the privileged nature of much that is told to the members of both professions the result is for the public good. But when it comes to the members of one profession usurping the functions of the other nothing but harm can follow. In a town the evils are somewhat less obvious, but in a village where very likely the clergyman and the medical man are the only two liberally educated inhabitants the evils of a dual medical control are grave.

THE DEARTH OF LOCUM-TENENTS.

WE have been informed from various quarters that owing to a multiplicity of causes, such as the action of the General Medical Council in forbidding the further employment of unqualified assistants, the war in South Africa which has absorbed the services of many civilian medical men, and the existence of an epidemic of influenza, there is a great dearth in the supply of medical men willing to act as locum-tenents. This being so, we regret to learn that some men who are available for such posts are with short-sighted policy taking advantage of the present distress to exact large fees. This is not as it should be. We have ever maintained that the labourer is worthy of his hire, but when we hear of locum-tenents demanding excessive remuneration on the plea that their services are greatly in demand and that demand is in excess of supply, we must enter a protest. The locum-tenent of to-day will be, or at any rate hopes to be, the practitioner of to-morrow, and he should be prepared to look at his opportunity rather from a broad professional point of view than from his own sectional point of view. We do not for one moment suggest that all young practitioners who seek for the post of a locum-tenent are acting in this manner, but it must be remembered that in a profession such as ours the defections of individual members are visited upon the profession as a whole, and therefore we earnestly trust that the few who are in error will speedily be brought to see the foolishness of their present course of action.

MATERIA MEDICA LABELS.

WE have received from Mr. H. K. Lewis, of 136, Gower-street, London, a book of materia medica labels adapted for public and private collections. The labels are arranged in two divisions, the first division comprising chemical materia medica (alcohols, alkaloids, sugars, and neutral bodies), and the second division comprising with a few exceptions substances of organised structure obtained from the vegetable and animal kingdoms. The whole series is compiled from the British Pharmacopœia of 1898 and other sources. The characters are clear and where the formula is possible it is given. The labels are of a convenient size and the gum is uniformly distributed and free from those objectionable qualities which frequently characterise adhesive matter. The compilation should be very useful. The price is 10s. 6d. the book including nearly 500 labels.

"A SAD AND URGENT CASE."

To the Editors of THE LANCET.

SIRS,—The following additional subscriptions have been received for this fund. The list will remain open until Jan. 27th only and subscriptions may be sent to Dr. H. Macnaughton-Jones, 141, Harley-street; or to

Yours faithfully,

WILLIAM H. BOURKE, M.D. Brux.

8, Moreton-gardens, South Kensington, Jan. 10th, 1900.

	£	s.	d.
Dr. A. Duke	0	10	0
"C."	0	10	0
Dr. S. Browne	2	0	0
Dr. T. Elliott	2	2	0
Dr. R. Barnes	1	1	0
Dr. W. H. Bourke	2	2	0
The Baroness Gray	10	0	0
Dr. F. G. Smart	1	1	0
Dr. R. E. Burges	0	10	6
Mr. D. B. Hewitt	1	1	0
Dr. W. Radford	1	0	0
Dep.-Surgeon-General Ferguson	1	1	0
Dr. P. L. Benson	1	1	0
Dr. H. Leslie Jones	1	1	0
Dr. Wm. McGeagh	0	10	6
Mr. E. White	1	1	0
Mr. J. R. White	0	10	6
"Well Wisher"	0	5	0
Dr. G. Patterson	1	1	0
Mrs. John Rigden	1	1	0
Mr. J. Shimeld	0	10	0
Surgeon-General T. S. Burnett	1	1	0
Dr. G. Cowen	0	10	0
Dr. A. Patton	1	1	0
Mr. A. Meldon	1	1	0
Dr. J. Welpley	1	0	0
Dr. C. B. Ball	1	1	0
Rev. D. J. Forbes	1	1	0
Dr. H. B. Pope	0	10	6
Dr. Arnold Ingle	2	2	0
Mr. Chas. Terry	2	2	0
Mr. O. A. Wickham	1	1	0
Dr. J. W. Martin	1	1	0
"H. S."	2	0	0
Dr. Clifford Allbutt	1	1	0
Dr. Hallgood	0	10	6
Per "Doctor's Daughter"	4	1	0
Dr. A. Caldwell	1	1	0
Mr. S. Parsons Smith	0	10	0
Dr. J. Hamilton	1	0	0
Per Mrs. Paddon	2	0	6
Dr. J. Redfern	0	10	6
Mrs. Full	1	1	0
Dr. R. McVittie	1	0	0
Dr. Lombe Atthill	1	0	0
Miss Allan	5	0	0
Dr. Wm. Travers	1	1	0
Dr. R. E. Hugo	0	10	0
Dr. A. W. Baker	1	1	0
Dr. Alice McLaren	1	1	0
Dr. Elizabeth Pace	1	1	0
Mr. R. G. Nesbitt	0	10	0
Lieutenant-Colonel W. Alexander, A.M.S.	1	1	0
Dr. J. Stewart	0	5	0
Mr. John Carver, J.P.	5	0	0
Dr. Wm. Fuller	1	1	0
Mr. Alfred Osmond	1	1	0
Mrs. Blake	1	1	0
Mr. Wm. Duff Bruce	2	2	0
Mrs. Hemans	2	0	0
Dr. J. Shaw Lytle	0	5	0
Miss Low	1	1	0

THE ORGANISATION OF THE PROFESSION: SOME SUGGESTIONS.

To the Editors of THE LANCET.

SIRS,—Re the query of your correspondent "Hon. Secretary" in THE LANCET of Dec. 30th, 1899 (p. 1870), in which he asks for particulars of a Provident Medical Association to be managed solely by practitioners, you refer him to the excellent and invaluable articles in THE LANCET on the "Battle of the Clubs," &c. These are, indeed, invaluable and will amply repay careful study by anyone interested in the question. The articles above referred to deal with a series of more or less local provident associations; the idea that your correspondent apparently has is for a more comprehensive scheme which shall be more generally applicable and embrace more than the particular district in which it happens to be started.

For some two years past I have been (with the help of a solicitor of considerable experience in organisation and an accountant) endeavouring to frame the constitution, rules, and directions for working just such a scheme under the name of "The Public Medical Service," and I hope that it will very shortly be ready for publication. If your correspondent or others interested will communicate with me either through your columns or privately I shall be happy to answer any brief and direct queries upon the subject. Briefly the principles upon which the scheme has been drawn up are that "The Public Medical Service"

shall be managed and controlled solely by registered medical practitioners; that every medical practitioner who agrees to conform to the rules shall be eligible to act on the medical staff; and that there shall be a wage limit and no canvassing. The service is to be managed by a central executive council annually elected from and by the general body of members. The rules are so drawn that they may apply as far as possible to any district. Power is delegated by the executive council to members residing in the various districts to carry on the service in that district within the powers delegated to them by the rules and to elect their district officers. The district officers are chairman, secretary, and treasurer. The district committees engage collectors as required. The collectors are absolutely forbidden to canvass. Members of the medical staff must sign an application form and undertake to obey the rules. Every registered medical practitioner in the district is eligible to join the medical staff and is *ipso facto* a member of the district committee upon being admitted upon the medical staff. The district committees carry on the business of the service in the district within the powers delegated to them by the rules. The questions of practitioners residing upon the borders of one or more districts, and other complications that may arise, have as far as possible been considered and provided for. The question of dispensing by chemists has been considered and rules have been framed should a district desire to adopt that method. Patients are admitted by the medical staff upon written application. Subscriptions of patients are payable according to their weekly income. No reduction is made for women or children as such, but members of a large family with a small joint income may be admitted for a smaller premium each than if they joined as separate entities. The actual premiums to be paid according to the income have been the subject of most careful consideration by a small committee of medical men. The classification has been agreed upon, but it is felt that the actual sums should not yet be fixed. Certain extra fees are payable by the patient to his medical adviser—for example, confinements, consultations, small-pox in the unvaccinated, certain cases under the Workmen's Compensation Act, &c. All extra fees are payable to, and retained by, the medical man. Subscriptions are paid to the collector, by him to the district treasurer, and thence to the head office. The books close quarterly, when the money is returned to members of the medical staff according to the actual amount received from their patients less expenses and contribution to the reserve fund. By an application of the card system the accounts of each member of the medical staff and of each district are kept separate with a minimum of clerical work. The card system has been adopted for keeping the records of patients and a modification of it for keeping the accounts; by this means the clerical work at the district and the head office is reduced to a minimum. Patients may transfer themselves quarterly from one practitioner to another or from one district to another after giving due notice. To enable them to do so they must obtain a certificate of transfer which states that they have paid up all subscriptions and arrears due to the medical man they are leaving. This certificate is taken to the new medical attendant and by him sent to the proper quarter. The wage limit and weekly subscriptions are subject to periodical revision which need not necessarily be retrospective. By the system adopted it will be possible to trace a patient from place to place and thus to a large extent prevent fraud. To be successful when started the scheme must be worked upon broad principles. The object of the executive council should be to induce all practitioners to join either as active or honorary members, their especial aim being to offer a substitute to practitioners to replace the medical aid appointments already held by them. It would be difficult to ask a man to sacrifice perhaps half his income unless one could offer some substitute. Central control is essential to ensure uniformity in the working of the district committee and to keep the service an individual entity and not a series of irregular small associations. The government must be democratic; this will be secured by the annual election of the whole council, sufficient continuity of procedure being secured by the right of the council to nominate—as from the council—and recommend their successors for election, nominations being also received from the general body of members. The details are innumerable, nor would any useful purpose be served by attempting to include more of them here. So far as possible the above principles have been carried out in the proposed rules and directions for working.

I shall be happy to receive communications from practitioners interested and to answer any short and direct queries upon the proposed scheme, and especially to know what support is likely to be forthcoming from the profession should such a scheme be propounded.

I am, Sirs, yours faithfully,

MURTAUGH HOUGHTON,
Hon. Secretary to the East Suburban Medical Protection Society, Limited; Member of Council of the Corporate and Medical Reform Association.

York-road, Ilford, Jan. 7th, 1900.

"THE MACKEY FUND."

To the Editors of THE LANCET.

SIRS,—I have received the following subscriptions on behalf of the widow of the late Mr. Stephen Mackey:—Amount previously reported, £13 8s.; Sir Joseph Ewart, M.D. St. And., F.R.C.P. Lond., Brighton, £1 1s.; Dr. Mouillot, Harrogate, £1 1s.

I am, Sirs, yours faithfully,

LEONARD C. DOBSON, M.D. Lond.

59, Addison-gardens, Kensington, Jan. 10th, 1900.

Enquirer.—Under certain circumstances—i.e., where there is good collateral security—an agent might consider such a proposal, but under those circumstances whoever acted as security might as well act as principal. The proceeding is for obvious reasons quite unusual and the collateral security would have to be very sound. For who is to ensure that the medical man will live to return the advance, or will have health to continue in practice, or will work the practice in such an efficient manner that here will be each year a surplus from which to repay the money lent?

H. A. B.—We cannot decide upon the comparative merits of the degrees and diplomas mentioned. Each is a good qualification and for each nowadays work of a fairly high standard is expected. An M.D. degree has the obvious use in general practice of giving its possessor an academic right to the popular title which he will anyhow receive; but the special department of work which our correspondent contemplates taking up is daily becoming more purely surgical.

J. W.—We do not recommend practitioners, specialist or other. Our correspondent can obtain from his medical man the names of the gentlemen whom it might be advisable to consult, if a consultation is required. The complaint is unfortunately an obstinate one in some of its forms.

H. J. P.—We do not recommend practitioners.

ERRATUM.—The death of Surgeon-Major Alexander Gibb Grant, which appeared under the heading of "The Services," in our last week's issue should read, instead, "Surgeon-Major Alexander Grant."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Leicester Free Press, Westmorland Gazette, Market Harborough Mail, Daily Mail (London), New York Sun, Birmingham Daily Post, Morning Herald, Nottingham Daily Guardian, Scotsman, Times of India, Pioneer Mail, Citizen, Builder, Architect, Liverpool Daily Post, Sanitary Record, Bristol Mercury, Brighton Gazette, Yorkshire Post, Birmingham Daily Gazette, Eastbourne Gazette, Hereford Mercury, Sheffield Daily Telegraph, Malton Gazette, Glasgow Herald, Local Government Chronicle, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Denbighshire Free Press, Carolina Spartan, Local Government Journal, Surrey Advertiser, Yorkshire Herald, Sportsman, Manchester Courier, Southampton News, British Dental Journal, Naval and Military Record, Drogheda Conservative, Batley News, Kentish Express, Fife Herald, Alliance News, Leighton Buzzard Reporter, Woburn Reporter, Wakefield Herald, East Sussex News, Todmorden Advertiser, Halifax Courier, Leeds Mercury, Norfolk Daily Standard, Eastern Daily Press (Norwich), &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 11th, 1900.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. in Shade.	Min. Temp	Wet Bulb	Dry Bulb	Remarks at 8.30 A.M.
Jan. 5	29·84	N.E.	...	55	45	39	40	41	Overcast
,, 6	30·03	S.W.	...	56	44	36	34	35	Foggy
,, 7	29·71	S.E.	0·32	53	45	35	42	44	Raining
,, 8	30·14	S.W.	0·09	59	49	35	38	39	Overcast
,, 9	30·06	N.W.	0·15	66	48	39	7	48	Overcast
,, 10	30·13	W.	0·03	66	48	39	41	43	Raining
,, 11	30·41	N.W.	0·01	48	42	37	38	40	Overcast

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (17th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (18th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (20th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (16th).—CHELSEA CLINICAL SOCIETY (Holy Trinity Parish Hall, Pavilion-road, Sloane-square, S.W.).—8.30 P.M. Paper:—Dr. T. V. Dickinson: Gynæcological Therapeutics.

PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—Papers:—Dr. W. Pakes: The Occurrence of the Proteus Vulgaris in a Venous Thrombus.—Mr. Shattock: A Specimen of Columnar-celled Carcinoma of the Uterus.—Dr. Foulerton: Mycotic Tumour from a Horse.—Dr. Auld: Some Results of Experiments with the Toxins of the Pneumococcus. And various Card Specimens.

WEDNESDAY (17th).—SOCIETY OF ARTS.—8 P.M. Mr. A. Rigg: Ventilation without Draughts.

THURSDAY (18th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road).—8.30 P.M. Annual General Meeting and Conversazione.

FRIDAY (19th).—EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Galloway: Consultation. (Skin).

TUESDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Consultation. (Medical.)

WEDNESDAY (17th).—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.). 4.30 P.M. Dr. T. D. Savill: Pustular Diseases. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Sir W. H. Broadbent, Bart: Clinical Lecture.

THURSDAY (18th).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.). 5 P.M. Clinical Demonstration:—Dr. H. Campbell: Cases of Locomotor Ataxy and other Disorders of the Gait.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC) 22, Chenies-street, W.C.).—3 P.M. Roentgen Ray Class:—Dr. H. Low: Demonstration I. 4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Dr. W. H. R. Rivers: The Senses of Primitive Man.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Penrose: Demonstration of Selected Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Surgical Cases. (Post-graduate Course.)

FRIDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Eye, Ear and Throat.)

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THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume, were given in THE LANCET of Jan. 6th.

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